

**Additional file 11 – Classification of proteins which were included in the overlapping protein set.**

Classification according to their functional process and cellular localization is presented.

| <i>Accession no</i> | <i>Protein description</i>                   | <i>Cellular localization</i> | <i>Functional proces</i>                                                                          |
|---------------------|----------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------|
| (1) O43707          | Actinin, alpha 4                             | Nucleus                      | Cell structure and mobility                                                                       |
| (2) O60235          | Transmembrane protease, serine 11D precursor | Extracellular Region         | Protein metabolism and modification<br>Nucleoside, nucleotide and nucleic acid metabolism         |
| (3) O60437          | Periplakin                                   | Cytoskeleton                 | Developmental processes<br>Cell proliferation and differentiation                                 |
| (4) O75223          | Protein C7orf24                              | ND                           | ND                                                                                                |
| (5) O95171          | Sciellin                                     | Cytoskeleton                 | Developmental processes                                                                           |
| (6) P00338          | L-lactate dehydrogenase A chain              | Cytoplasm                    | Carbohydrate metabolism                                                                           |
| (7) P00441          | Superoxide dismutase [Cu-Zn]                 | Extracellular Region         | Immunity and defense                                                                              |
| (8) P00450          | Ceruloplasmin precursor                      | Extracellular Region         | Homeostasis                                                                                       |
| (9) P00558          | Phosphoglycerate kinase 1                    | Cytoplasm                    | Carbohydrate metabolism                                                                           |
| (10) P00738         | Haptoglobin                                  | Extracellular Region         | Blood circulation and gas exchange<br>Protein metabolism and modification<br>Immunity and defense |
| (11) P01009         | Alpha-1-antitrypsin precursor                | Extracellular Region         | Protein metabolism and modification                                                               |
| (12) P01024         | Complement component 3                       | Extracellular Region         | Immunity and defense                                                                              |
| (13) P01040         | Cystatin A (stefin A)                        | Cytoskeleton                 | Protein metabolism and modification                                                               |
| (14) P01591         | Immunoglobulin J chain                       | Extracellular Region         | Immunity and defense                                                                              |
| (15) P01625         | Ig kappa chain V-IV region Len               | Extracellular Region         | Immunity and defense                                                                              |
| (16) P01833         | Polymeric immunoglobulin receptor            | Membrane                     | Intracellular protein traffic<br>Immunity and defense                                             |
| (17) P01834         | Ig kappa chain C region                      | Extracellular Region         | Immunity and defense                                                                              |
| (18) P01842         | Ig lambda chain C regions                    | Membrane                     | Immunity and defense                                                                              |
| (19) P01857         | Ig gamma-1 chain C region                    | Membrane                     | Immunity and defense                                                                              |
| (20) P01859         | Ig gamma-2 chain C region                    | Membrane                     | Immunity and defense                                                                              |
| (21) P01861         | Ig gamma-4 chain C region                    | Membrane                     | Immunity and defense                                                                              |
| (22) P01871         | Ig mu chain C region                         | Membrane                     | Immunity and defense                                                                              |
| (23) P01876         | Ig alpha-1 chain C region                    | Extracellular Region         | Immunity and defense                                                                              |
| (24) P01877         | Ig alpha-2 chain C region                    | Membrane                     | Immunity and defense                                                                              |

|      |        |                                          |                      |                                          |
|------|--------|------------------------------------------|----------------------|------------------------------------------|
| (25) | P02545 | Lamin-A/C                                | Nucleus              | Cell structure and mobility              |
| (26) | P02647 | Apolipoprotein A1                        | Extracellular Region | Lipid, fatty acid and steroid metabolism |
|      |        |                                          |                      | Transport                                |
| (27) | P02671 | Fibrinogen alpha chain precursor         | Extracellular Region | Cell proliferation and differentiation   |
|      |        |                                          |                      | Blood circulation and gas exchange       |
|      |        |                                          |                      | Immunity and defense                     |
| (28) | P02675 | Fibrinogen beta chain precursor          | Extracellular Region | Immunity and defense                     |
|      |        |                                          |                      | Blood circulation and gas exchange       |
|      |        |                                          |                      | Cell proliferation and differentiation   |
| (29) | P02679 | Fibrinogen gamma chain                   | Extracellular Region | Blood circulation and gas exchange       |
|      |        |                                          |                      | Immunity and defense                     |
|      |        |                                          |                      | Cell proliferation and differentiation   |
| (30) | P02749 | Apolipoprotein H (beta-2-glycoprotein I) | Extracellular Region | Immunity and defense                     |
| (31) | P02763 | Alpha-1-acid glycoprotein 1              | Extracellular Region | Immunity and defense                     |
| (32) | P02765 | Alpha-2-HS-glycoprotein                  | Extracellular Region | Immunity and defense                     |
|      |        |                                          |                      | Developmental processes                  |
|      |        |                                          |                      | Protein metabolism and modification      |
| (33) | P02766 | Transthyretin                            | Extracellular Region | Transport                                |
| (34) | P02768 | Serum albumin precursor                  | Extracellular Region | Transport                                |
| (35) | P02774 | Vitamin D-binding protein precursor      | Extracellular Region | Coenzyme and prosthetic group metabolism |
|      |        |                                          |                      | Transport                                |
| (36) | P02787 | Serotransferrin                          | Extracellular Region | Transport                                |
|      |        |                                          |                      | Miscellaneous                            |
| (37) | P02788 | Lactotransferrin                         | Extracellular Region | Miscellaneous                            |
|      |        |                                          |                      | Transport                                |
| (38) | P02790 | Hemopexin                                | Extracellular Region | Transport                                |
|      |        |                                          |                      | Coenzyme and prosthetic group metabolism |
| (39) | P03973 | Antileukoproteinase 1 precursor          | Extracellular Region | Immunity and defense                     |
|      |        |                                          |                      | Protein metabolism and modification      |
| (40) | P04040 | Catalase                                 | Membrane             | Immunity and defense                     |
|      |        |                                          |                      | Electron transport                       |
| (41) | P04075 | Fructose-bisphosphate aldolase A         | ND                   | Carbohydrate metabolism                  |
| (42) | P04080 | Cystatin B                               | Extracellular Region | Protein metabolism and modification      |

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|------|--------|---------------------------------------------------------------------|----------------------|----------------------------------------------------|
| (43) | P04083 | Annexin A1                                                          | Cytoskeleton         | Cell structure and mobility                        |
|      |        |                                                                     |                      | Lipid, fatty acid and steroid metabolism           |
|      |        |                                                                     |                      | Signal transduction                                |
| (44) | P04406 | Glyceraldehyde-3-phosphate dehydrogenase, liver                     | Cytoplasm            | Carbohydrate metabolism                            |
| (45) | P04792 | Heat-shock protein beta-1                                           | Cytoskeleton         | Protein metabolism and modification                |
|      |        |                                                                     |                      | Immunity and defense                               |
| (46) | P05109 | Calgranulin A (S100A8)                                              | Extracellular Region | Cell structure and mobility                        |
|      |        |                                                                     |                      | Immunity and defense                               |
| (47) | P05164 | Myeloperoxidase precursor                                           | Lysosome             | Immunity and defense                               |
| (48) | P06702 | Calgranulin B (S100A9)                                              | Extracellular Region | Signal transduction                                |
|      |        |                                                                     |                      | Immunity and defense                               |
| (49) | P06731 | Carcinoembryonic antigen-related cell adhesion molecule 5 precursor | Membrane             | Signal transduction                                |
|      |        |                                                                     |                      | Cell adhesion                                      |
| (50) | P06733 | Alpha-enolase                                                       | Nucleus              | Carbohydrate metabolism                            |
| (51) | P06753 | Tropomyosin 3                                                       | Cytoskeleton         | Developmental processes                            |
|      |        |                                                                     |                      | Muscle contraction                                 |
|      |        |                                                                     |                      | Cell structure and mobility                        |
| (52) | P07108 | Acyl-CoA binding protein                                            | ND                   | Lipid, fatty acid and steroid metabolism           |
| (53) | P07237 | Protein disulfide-isomerase precursor                               | Extracellular Region | Protein metabolism and modification                |
| (54) | P07355 | Annexin A2                                                          | Membrane             | Intracellular protein traffic                      |
|      |        |                                                                     |                      | Developmental processes                            |
|      |        |                                                                     |                      | Cell structure and mobility                        |
| (55) | P07476 | Involucrin                                                          | Cytoskeleton         | Cell structure and mobility                        |
|      |        |                                                                     |                      | Cell proliferation and differentiation             |
| (56) | P07737 | Profilin 1                                                          | Cytoskeleton         | Nucleoside, nucleotide and nucleic acid metabolism |
|      |        |                                                                     |                      | Developmental processes                            |
|      |        |                                                                     |                      | Cell adhesion                                      |
| (57) | P07858 | Cathepsin B                                                         | Intracellular        | Protein metabolism and modification                |
|      |        |                                                                     |                      | Oncogenesis                                        |
| (58) | P07900 | Heat shock protein HSP 90-alpha 2                                   | Cytoplasm            | Immunity and defense                               |
|      |        |                                                                     |                      | Protein metabolism and modification                |
| (59) | P08107 | Heat shock 70 kDa protein 1                                         | Mitochondrion        | Protein metabolism and modification                |
|      |        |                                                                     |                      | Immunity and defense                               |

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|------|--------|--------------------------------------------|-----------------------|----------------------------------------------------|
| (60) | P08123 | Collagen alpha 2 T                         | Extracellular Region  | Cell adhesion                                      |
|      |        |                                            |                       | Cell structure and mobility                        |
| (61) | P08238 | Heat shock protein HSP 90-beta             | Cytoplasm             | Protein metabolism and modification                |
|      |        |                                            |                       | Immunity and defense                               |
| (62) | P08246 | Leukocyte elastase precursor               | Extracellular Region  | Immunity and defense                               |
|      |        |                                            |                       | Protein metabolism and modification                |
| (63) | P08311 | cathepsin G                                | Lysosome              | Immunity and defense                               |
|      |        |                                            |                       | Apoptosis                                          |
|      |        |                                            |                       | Protein metabolism and modification                |
| (64) | P08603 | Complement factor H                        | Extracellular Region  | Immunity and defense                               |
| (65) | P08670 | Vimentin                                   | Cytoskeleton          | Developmental processes                            |
|      |        |                                            |                       | Cell structure and mobility                        |
| (66) | P09211 | Glutathione S-transferase P                | Cytoplasm             | Immunity and defense                               |
| (67) | P10599 | Thioredoxin                                | Cytoplasm             | Immunity and defense                               |
|      |        |                                            |                       | Other metabolism                                   |
|      |        |                                            |                       | Electron transport                                 |
|      |        |                                            |                       | Signal transduction                                |
|      |        |                                            |                       | Apoptosis                                          |
|      |        |                                            |                       | Cell proliferation and differentiation             |
| (68) | P11021 | 78 kDa glucose-regulated protein           | Endoplasmic Reticulum | Developmental processes                            |
|      |        |                                            |                       | Apoptosis                                          |
| (69) | P11142 | Heat shock 70kDa protein 8                 | Cell Surface          | Immunity and defense                               |
|      |        |                                            |                       | Protein metabolism and modification                |
| (70) | P12429 | Annexin A3                                 | Cytoplasm             | Lipid, fatty acid and steroid metabolism           |
| (71) | P12724 | Eosinophil cationic protein precursor      | Extracellular Region  | Nucleoside, nucleotide and nucleic acid metabolism |
| (72) | P13639 | Elongation factor 2                        | Cytoplasm             | Protein metabolism and modification                |
| (73) | P13796 | Lymphocyte cytosolic protein 1 (L-plastin) | Cytoplasm             | Cell structure and mobility                        |
| (74) | P13987 | CD59 glycoprotein precursor                | Membrane              | Immunity and defense                               |
| (75) | P14618 | Pyruvate kinase isozymes M1/M2             | Cytoplasm             | Carbohydrate metabolism                            |
| (76) | P14780 | Matrix metalloproteinase-9 precursor       | Extracellular Region  | Protein metabolism and modification                |
| (77) | P14923 | Desmoplakin-3                              | Membrane              | Signal transduction                                |
| (78) | P15924 | Desmoplakin                                | Cytoskeleton          | Cell proliferation and differentiation             |
|      |        |                                            |                       | Protein metabolism and modification                |

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|------|--------|---------------------------------------------------------|----------------------|----------------------------------------------------|
|      |        |                                                         |                      | Developmental processes                            |
| (79) | P16401 | Histone H1.5 (Histone H1a)                              | Intracellular        | Nucleoside, nucleotide and nucleic acid metabolism |
| (80) | P18206 | Vinculin                                                | Membrane             | Cell structure and mobility                        |
| (81) | P18510 | Interleukin 1 receptor antagonist protein               | Extracellular Region | Signal transduction                                |
|      |        |                                                         |                      | Immunity and defense                               |
| (82) | P18669 | Phosphoglycerate mutase 1                               | Cytoplasm            | Carbohydrate metabolism                            |
| (83) | P20160 | Azurocidin 1 (cationic antimicrobial protein 37)        | Extracellular Region | Immunity and defense                               |
|      |        |                                                         |                      | Protein metabolism and modification                |
| (84) | P20810 | Calpastatin (Calpain inhibitor) (Sperm BS-17 component) | Cytoplasm            | Protein metabolism and modification                |
| (85) | P22528 | Cornifin B                                              | Cytoskeleton         | Protein metabolism and modification                |
|      |        |                                                         |                      | Developmental processes                            |
|      |        |                                                         |                      | Cell proliferation and differentiation             |
| (86) | P22532 | Small proline-rich protein 2D                           | Cytoskeleton         | Cell proliferation and differentiation             |
|      |        |                                                         |                      | Developmental processes                            |
| (87) | P22735 | Protein-glutamine gamma-glutamyltransferase K           | Cytoskeleton         | Developmental processes                            |
|      |        |                                                         |                      | Protein metabolism and modification                |
| (88) | P23528 | cofilin-1                                               | Nucleus              | Cell structure and mobility                        |
| (89) | P24158 | Myeloblastin precursor                                  | Cellular             | Protein metabolism and modification                |
| (90) | P26038 | Moesin                                                  | Cytoskeleton         | Cell structure and mobility                        |
| (91) | P27482 | Calmodulin-like protein 3                               | ND                   | Cell cycle                                         |
|      |        |                                                         |                      | Cell proliferation and differentiation             |
|      |        |                                                         |                      | Signal transduction                                |
| (92) | P28799 | Granulins precursor                                     | Extracellular Region | Signal transduction                                |
| (93) | P29373 | Cellular retinoic acid-binding protein 2                | Cytoplasm            | Coenzyme and prosthetic group metabolism           |
|      |        |                                                         |                      | Lipid, fatty acid and steroid metabolism           |
|      |        |                                                         |                      | Signal transduction                                |
|      |        |                                                         |                      | Transport                                          |
|      |        |                                                         |                      | Developmental processes                            |
| (94) | P29508 | Squamous cell carcinoma antigen 1 (SCCA-1); Serpin B3   | Extracellular Region | Protein metabolism and modification                |
| (95) | P30086 | Prostatic binding protein                               | Cytoplasm            | Signal transduction                                |
| (96) | P30740 | Monocyte/neutrophil elastase inhibitor                  | Cytoplasm            | Protein metabolism and modification                |
| (97) | P31151 | S100 calcium-binding protein A7 (psoriasin)             | Extracellular Region | Developmental processes                            |
|      |        |                                                         |                      | Cell proliferation and differentiation             |

|       |        |                                                           |                      |                                                    |
|-------|--------|-----------------------------------------------------------|----------------------|----------------------------------------------------|
|       |        |                                                           | Immunity and defense |                                                    |
| (98)  | P31947 | Stratifin; 14-3-3 protein sigma                           | Extracellular Region | Signal transduction                                |
|       |        |                                                           |                      | Cell cycle                                         |
|       |        |                                                           |                      | Protein targeting and localization                 |
| (99)  | P31949 | S100 calcium-binding protein A11 (calgizzarine)           | Nucleus              | Nucleoside, nucleotide and nucleic acid metabolism |
|       |        |                                                           |                      | Oncogenesis                                        |
|       |        |                                                           |                      | Cell cycle                                         |
| (100) | P32320 | Cytidine deaminase                                        | Extracellular Region | Nucleoside, nucleotide and nucleic acid metabolism |
| (101) | P32926 | Desmoglein-3                                              | Membrane             | Cell adhesion                                      |
|       |        |                                                           |                      | Signal transduction                                |
| (102) | P35321 | Small-proline rich protein 1A; Cornifin A                 | Cytoskeleton         | Cell proliferation and differentiation             |
|       |        |                                                           |                      | Developmental processes                            |
|       |        |                                                           |                      | Protein metabolism and modification                |
| (103) | P35326 | Small proline-rich protein 2A                             | Cytoskeleton         | Developmental processes                            |
|       |        |                                                           |                      | Cell proliferation and differentiation             |
| (104) | P35579 | Myosin-9                                                  | Cytoskeleton         | Developmental processes                            |
|       |        |                                                           |                      | Cell structure and mobility                        |
| (105) | P37837 | Transaldolase                                             | Cytoplasm            | Carbohydrate metabolism                            |
| (106) | P47929 | Lectin, galactoside-binding, soluble, 7 (galectin 7)      | Extracellular Region | Apoptosis                                          |
|       |        |                                                           |                      | Cell adhesion                                      |
|       |        |                                                           |                      | Immunity and defense                               |
| (107) | P48594 | Squamous cell carcinoma antigen 2; Serpin B4              | Cytoplasm            | Protein metabolism and modification                |
| (108) | P54108 | Cysteine-rich secretory protein 3                         | Extracellular Region | Developmental processes                            |
| (109) | P59665 | Neutrophil defensin 1 precursor                           | Extracellular Region | Immunity and defense                               |
| (110) | P60174 | Triosephosphate isomerase                                 | Cytoplasm            | Nucleoside, nucleotide and nucleic acid metabolism |
|       |        |                                                           |                      | Carbohydrate metabolism                            |
| (111) | P60709 | Actin, cytoplasmic 1                                      | Cytoskeleton         | Cell structure and mobility                        |
|       |        |                                                           |                      | Transport                                          |
|       |        |                                                           |                      | Intracellular protein traffic                      |
|       |        |                                                           |                      | Cell cycle                                         |
| (112) | P60903 | S100 calcium binding protein A10; Calpactin I light chain | ND                   | Developmental processes                            |
| (113) | P61626 | Lysozym C                                                 | Extracellular Region | Carbohydrate metabolism                            |
|       |        |                                                           |                      | Immunity and defense                               |

|       |        |                                                       |                      |                                                    |
|-------|--------|-------------------------------------------------------|----------------------|----------------------------------------------------|
| (114) | P62805 | Histone H4                                            | Nucleus              | Nucleoside, nucleotide and nucleic acid metabolism |
| (115) | P62937 | Peptidyl-prolyl cis-trans isomerase A (Cyclophilin A) | Extracellular Region | Protein metabolism and modification                |
|       |        |                                                       |                      | Immunity and defense                               |
|       |        |                                                       |                      | Intracellular protein traffic                      |
| (116) | P62988 | Ubiquitin                                             | Nucleus              | Protein metabolism and modification                |
| (117) | P63104 | 14-3-3 protein zeta/delta                             | Cytoplasm            | Cell cycle                                         |
|       |        |                                                       |                      | Signal transduction                                |
|       |        |                                                       |                      | Protein targeting and localization                 |
| (118) | P67936 | Tropomyosin alpha 4 chain                             | Cytoskeleton         | Muscle contraction                                 |
|       |        |                                                       |                      | Cell structure and mobility                        |
|       |        |                                                       |                      | Developmental processes                            |
| (119) | P68104 | eukaryotic translation elongation factor 1 alpha 1    | Cytoplasm            | Protein metabolism and modification                |
| (120) | P68871 | Hemoglobin beta chain                                 | Cytoplasm            | Transport                                          |
|       |        |                                                       |                      | Other metabolism                                   |
| (121) | P69905 | Hemoglobin alpha subunit                              | Cytoplasm            | Transport                                          |
|       |        |                                                       |                      | Blood circulation and gas exchange                 |
| (122) | P80188 | Neutrophil gelatinase-associated lipocalin            | Cytoplasm            | Oncogenesis                                        |
|       |        |                                                       |                      | Immunity and defense                               |
|       |        |                                                       |                      | Transport                                          |
| (123) | P80511 | Protein S100-A12                                      | Cytoplasm            | Immunity and defense                               |
| (124) | Q01469 | Fatty acid-binding protein, epidermal                 | Cytoplasm            | Transport                                          |
|       |        |                                                       |                      | Developmental processes                            |
|       |        |                                                       |                      | Signal transduction                                |
|       |        |                                                       |                      | Coenzyme and prosthetic group metabolism           |
|       |        |                                                       |                      | Lipid, fatty acid and steroid metabolism           |
| (125) | Q02487 | Desmocollin-2 precursor                               | Cytoskeleton         | Signal transduction                                |
|       |        |                                                       |                      | Cell adhesion                                      |
| (126) | Q06830 | Peroxiredoxin 1                                       | Cytoplasm            | Immunity and defense                               |
| (127) | Q09666 | Neuroblast differentiation-associated protein AHNAK   | Nucleus              | Developmental processes                            |
| (128) | Q13835 | Plakophilin 1                                         | Cytoskeleton         | Signal transduction                                |
|       |        |                                                       |                      | Cell adhesion                                      |
| (129) | Q16610 | Extracellular matrix protein 1 precursor              | Extracellular Region | Signal transduction                                |
| (130) | Q92817 | Envoplakin                                            | Cytoskeleton         | Developmental processes                            |

|       |        |                                        |                                        |
|-------|--------|----------------------------------------|----------------------------------------|
|       |        |                                        | Cell adhesion                          |
|       |        |                                        | Cell structure and mobility            |
| (131) | Q9HC84 | Mucin-5B precursor                     | Extracellular Region                   |
| (132) | Q9NQ38 | Serine protease inhibitor Kazal-type 5 | Extracellular Region                   |
| (133) | Q9UBC9 | Small proline-rich protein 3           | Envelope                               |
|       |        |                                        | Cell proliferation and differentiation |
|       |        |                                        | Developmental processes                |
| (134) | Q9UBX7 | Kallikrein 11 precursor                | Extracellular Region                   |
|       |        |                                        | Cell proliferation and differentiation |
|       |        |                                        | Developmental processes                |
|       |        |                                        | Protein metabolism and modification    |
|       |        |                                        | Cell cycle                             |
| (135) | Q9UKR3 | Kallikrein 13 precursor                | Extracellular Region                   |
|       |        |                                        | Protein metabolism and modification    |
| (136) | Q9UL52 | Transmembrane protease, serine 11E     | Membrane                               |
|       |        |                                        | Protein metabolism and modification    |