

### **Chromosomal instability in the prediction of pituitary tumor prognosis.**

Hélène Lasolle, Mad-Hélénie Elsensohn, Anne Wierinckx, Eudeline Alix, Clément Bonnefille, Alexandre Vasiljevic, Christine Cortet, Bénédicte Decoudier, Nathalie Sturm, Stephan Gaillard, Amandine Ferrière, Pascal Roy, Emmanuel Jouanneau, Philippe Bertolino, Claire Bardel, Damien Sanlaville, Gérald Raverot\*.

\*Corresponding author:

Gérald Raverot

Fédération d'endocrinologie

Centre de Référence des Maladies Rares Hypophysaires

Groupement Hospitalier Est, Hospices civils de Lyon

gerald.raverot@chu-lyon.fr

### **Supplementary material**

**Table S1:** Number of recurrent and non-recurrent lactotroph tumors concerned by deletion, gain and copy-neutral LOH for each altered gene.

**Table S2:** LRT p-values of univariate and multivariate logistic regressions on the genes significantly associated with recurrence in lactotroph tumors.

# **Figure S1 : FISH analysis in 8 tumors harboring gains of the GNAS locus.**

A. Heatmap representation of the CNV in the somatotroph tumors with GNAS locus duplication which were analyzed using FISH.

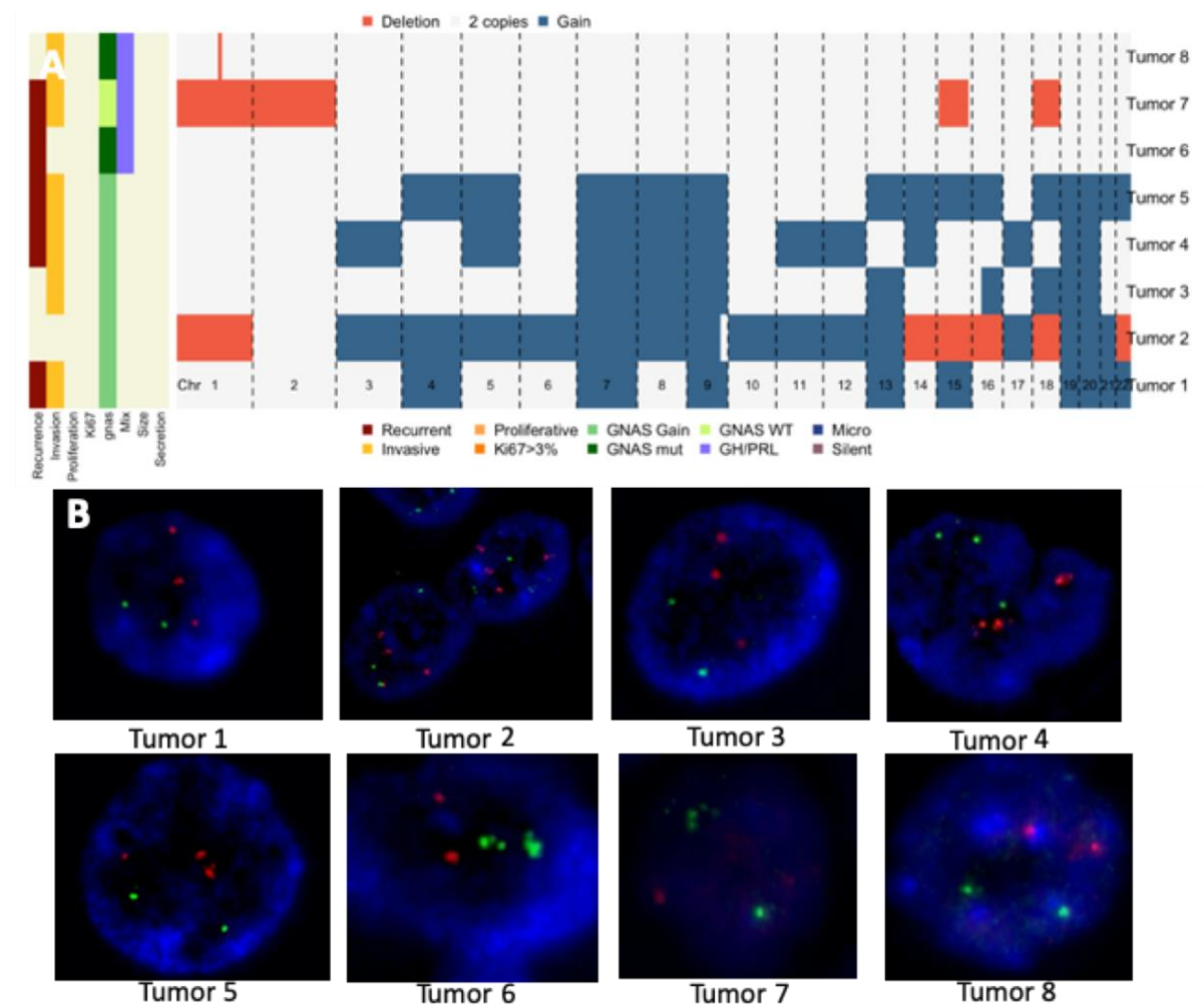
B. Illustration of the results obtained with FISH analysis

FISH was performed on interphasic nuclei from frozen tumor-tissue appositions.

Probes used for FISH studies included 11pter (D11S2071) subtelomere probe (Cytocell, Cambridge, UK) in green and BAC RP1-309F20 encompassing *GNAS* locus in red.

Independent analyses of more than 20 cells were carried out for each tumor.

For tumor 1 to 5, at least 3 red dots are observed in each nucleus confirming the *GNAS* locus duplication identified by CGHarray. FISH analysis confirmed chromosome 11 gains in tumor 2 and tumor 4, as shown using CGHarray. For tumor 6 to 8, FISH analysis confirmed the absence of chromosome 20 and chromosome 11 gains. Tumor 6 and 8 harbored *GNAS* mutation while tumor 7 did not.



**Figure S2:** Heatmap representation of the transcriptomic analysis of 32 lactotroph tumors using GSEA with hallmark gene set (100 top genes associated with recurrent tumors in grey and non-recurrent in yellow. Upregulated genes are presented in blue, downregulated genes are presented in red)

|              |            |  |
|--------------|------------|--|
| 100279472    | NORMALIZED |  |
| 100279473    | NORMALIZED |  |
| 100279474    | NORMALIZED |  |
| 100279475    | NORMALIZED |  |
| 100279476    | NORMALIZED |  |
| 100279477    | NORMALIZED |  |
| 100279478    | NORMALIZED |  |
| 100279479    | NORMALIZED |  |
| 100279480    | NORMALIZED |  |
| 100337573    | NORMALIZED |  |
| 100337576    | NORMALIZED |  |
| 100337587    | NORMALIZED |  |
| 100337588    | NORMALIZED |  |
| 100337590    | NORMALIZED |  |
| 100337596    | NORMALIZED |  |
| 100337600    | NORMALIZED |  |
| 100338924    | NORMALIZED |  |
| 100338925    | NORMALIZED |  |
| 100338926    | NORMALIZED |  |
| 100338928    | NORMALIZED |  |
| 100338930    | NORMALIZED |  |
| 100338932    | NORMALIZED |  |
| 100338933    | NORMALIZED |  |
| 100338934    | NORMALIZED |  |
| 100338935    | NORMALIZED |  |
| 100342984    | NORMALIZED |  |
| 100348756    | NORMALIZED |  |
| 100337575    | NORMALIZED |  |
| 100337589    | NORMALIZED |  |
| 100337591    | NORMALIZED |  |
| 100337593    | NORMALIZED |  |
| 100337594    | NORMALIZED |  |
| 100337597    | NORMALIZED |  |
| 100338931    | NORMALIZED |  |
| SampleName   |            |  |
| GRIPAP1      |            |  |
| NBPF26       |            |  |
| PPP1R42      |            |  |
| AL391095.1   |            |  |
| LTNC01619    |            |  |
| ZSWIM8       |            |  |
| ATFM1        |            |  |
| GDPD3        |            |  |
| TOP2A        |            |  |
| TAS2R16      |            |  |
| AC010551.2   |            |  |
| AC114980.1   |            |  |
| FAM92B       |            |  |
| ARRDC3       |            |  |
| TDRO3        |            |  |
| LTNC01671    |            |  |
| ADAM22       |            |  |
| LRRC36       |            |  |
| ALMS1        |            |  |
| TMEM74       |            |  |
| SPANXN3      |            |  |
| P2RY1        |            |  |
| AC098848.1   |            |  |
| CCDC18       |            |  |
| CD99L2       |            |  |
| TMEM161B-AS1 |            |  |
| TSC2         |            |  |
| UBAP2L       |            |  |
| LTNC02253    |            |  |
| FTX          |            |  |
| UPF3A        |            |  |
| SLC7A3       |            |  |
| SEMA3D       |            |  |
| TMLHE        |            |  |
| FAM238B      |            |  |
| ZMAT1        |            |  |
| AC245297.3   |            |  |
| PDE11A       |            |  |
| AC099518.2   |            |  |
| APEX2        |            |  |
| MED12L       |            |  |
| UNKL         |            |  |
| SPART        |            |  |
| AC079416.1   |            |  |
| APLNLR       |            |  |
| LPCAT4       |            |  |
| EFNA3        |            |  |
| SLC1A4       |            |  |
| TRIR3        |            |  |
| BARD1        |            |  |
| CCL4         |            |  |
| KCNJ5        |            |  |
| AC087667.1   |            |  |
| FBL          |            |  |
| NOP53        |            |  |
| KCNJ2-AS1    |            |  |
| SLC47A1      |            |  |
| ADK          |            |  |
| ABCA13       |            |  |
| MAP3K2-DT    |            |  |
| FZD2         |            |  |
| COA4         |            |  |
| OSTF1        |            |  |
| AC110491.1   |            |  |
| DPH5         |            |  |
| TCA1         |            |  |
| TMEM50A      |            |  |
| ANP32BP1     |            |  |
| SAMO5        |            |  |
| TENT5A       |            |  |
| SRSE8        |            |  |
| LTNC02200    |            |  |
| RPS15A       |            |  |
| RPL13A       |            |  |
| GJB1         |            |  |
| RPS3         |            |  |
| AC073367.1   |            |  |
| MOR27        |            |  |
| NUDT19       |            |  |
| KDELR2       |            |  |
| RUNX3        |            |  |
| AC009754.2   |            |  |
| VSI64        |            |  |
| PSMR2        |            |  |
| BSCL2        |            |  |
| MPV17        |            |  |
| WFDC5        |            |  |
| AC008629.1   |            |  |
| RPS25        |            |  |
| MRPS17       |            |  |
| YKT6         |            |  |
| UOCRB        |            |  |
| PUS3         |            |  |
| PPP6C        |            |  |
| GSTO1        |            |  |
| AL353572.4   |            |  |
| RPS24        |            |  |
| TMEM200A     |            |  |
| PTS          |            |  |
| RPS13        |            |  |