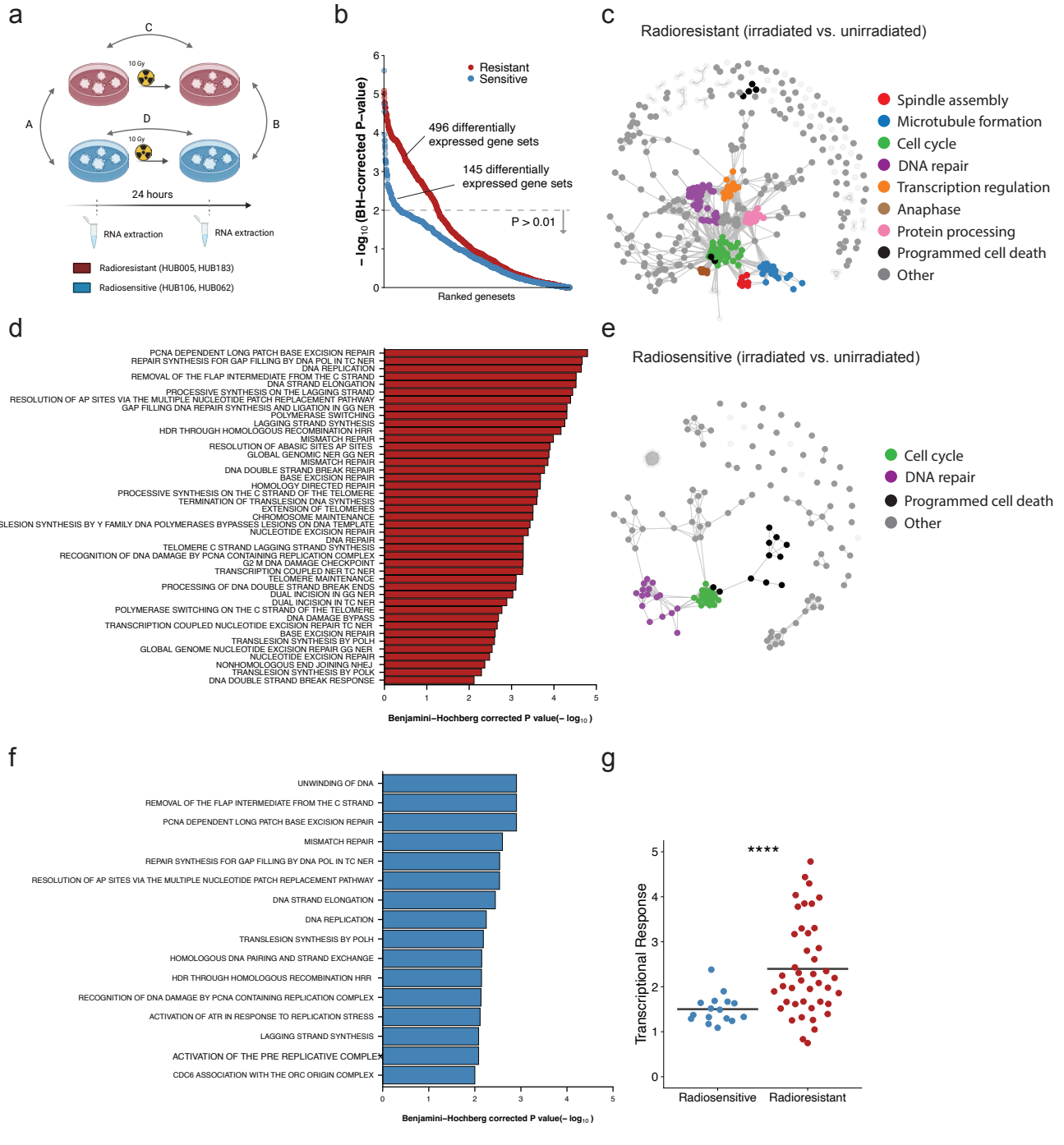
a
C
10 Gy
A
B
D
10 Gy
24 hours
RNA extraction
RNA extraction
Radioresistant (HUB005, HUB183)
Radiosensitive (HUB106, HUB062)
b
Resistant
Sensitive
496 differentially expressed gene sets
145 differentially expressed gene sets
P > 0.01
− log10 (BH−corrected P−value)
Ranked genesets
c
Radioresistant (irradiated vs. unirradiated)
Spindle assembly
Microtubule formation
Cell cycle
DNA repair
Transcription regulation
Anaphase
Protein processing
Programmed cell death
Other
d
PCNA DEPENDENT LONG PATCH BASE EXCISION REPAIR
REPAIR SYNTHESIS FOR GAP FILLING BY DNA POL IN TC NER
DNA REPLICATION
REMOVAL OF THE FLAP INTERMEDIATE FROM THE C STRAND
DNA STRAND ELONGATION
PROCESSIVE SYNTHESIS ON THE LAGGING STRAND
RESOLUTION OF AP SITES VIA THE MULTIPLE NUCLEOTIDE PATCH REPLACEMENT PATHWAY
GAP FILLING DNA REPAIR SYNTHESIS AND LIGATION IN GG NER
POLYMERASE SWITCHING
LAGGING STRAND SYNTHESIS
HDR THROUGH HOMOLOGOUS RECOMBINATION HRR
MISMATCH REPAIR
RESOLUTION OF ABASIC SITES AP SITES
GLOBAL GENOMIC NER GG NER
MISMATCH REPAIR
DNA DOUBLE STRAND BREAK REPAIR
BASE EXCISION REPAIR
HOMOLOGY DIRECTED REPAIR
PROCESSIVE SYNTHESIS ON THE C STRAND OF THE TELOMERE
TERMINATION OF TRANSLESION DNA SYNTHESIS
EXTENSION OF TELOMERES
CHROMOSOME MAINTENANCE
TRANSLESION SYNTHESIS BY Y FAMILY DNA POLYMERASES BYPASSES LESIONS ON DNA TEMPLATE
NUCLEOTIDE EXCISION REPAIR
DNA REPAIR
TELOMERE C STRAND LAGGING STRAND SYNTHESIS
RECOGNITION OF DNA DAMAGE BY PCNA CONTAINING REPLICATION COMPLEX
G2 M DNA DAMAGE CHECKPOINT
TRANSCRIPTION COUPLED NER TC NER
TELOMERE MAINTENANCE
PROCESSING OF DNA DOUBLE STRAND BREAK ENDS
DUAL INCISION IN GG NER
DUAL INCISION IN TC NER
POLYMERASE SWITCHING ON THE C STRAND OF THE TELOMERE
DNA DAMAGE BYPASS
TRANSCRIPTION COUPLED NUCLEOTIDE EXCISION REPAIR TC NER
BASE EXCISION REPAIR
TRANSLESION SYNTHESIS BY POLH
GLOBAL GENOME NUCLEOTIDE EXCISION REPAIR GG NER
NUCLEOTIDE EXCISION REPAIR
NONHOMOLOGOUS END JOINING NHEJ
TRANSLESION SYNTHESIS BY POLK
DNA DOUBLE STRAND BREAK RESPONSE
Benjamini−Hochberg corrected P value(− log10)
e
Radiosensitive (irradiated vs. unirradiated)
Cell cycle
DNA repair
Programmed cell death
Other
f
UNWINDING OF DNA
REMOVAL OF THE FLAP INTERMEDIATE FROM THE C STRAND
PCNA DEPENDENT LONG PATCH BASE EXCISION REPAIR
MISMATCH REPAIR
REPAIR SYNTHESIS FOR GAP FILLING BY DNA POL IN TC NER
RESOLUTION OF AP SITES VIA THE MULTIPLE NUCLEOTIDE PATCH REPLACEMENT PATHWAY
DNA STRAND ELONGATION
DNA REPLICATION
TRANSLESION SYNTHESIS BY POLH
HOMOLOGOUS DNA PAIRING AND STRAND EXCHANGE
HDR THROUGH HOMOLOGOUS RECOMBINATION HRR
RECOGNITION OF DNA DAMAGE BY PCNA CONTAINING REPLICATION COMPLEX
ACTIVATION OF ATR IN RESPONSE TO REPLICATION STRESS
LAGGING STRAND SYNTHESIS
ACTIVATION OF THE PRE REPLICATIVE COMPLEX
CDC6 ASSOCIATION WITH THE ORC ORIGIN COMPLEX
Benjamini−Hochberg corrected P value(− log10)
g
****
Transcriptional Response
Radiosensitive
Radioresistant