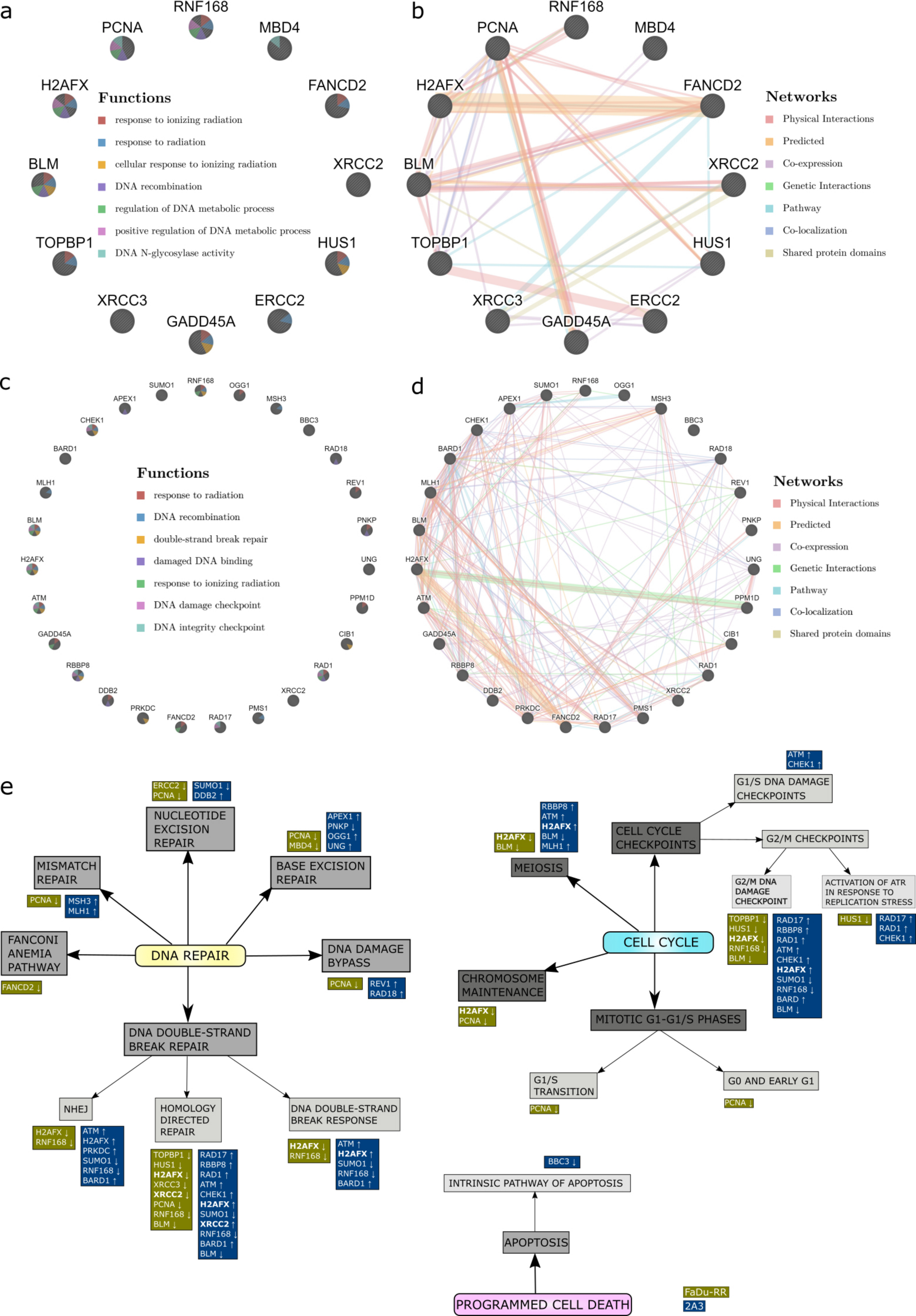
a
RNF168
PCNA
MBD4
H2AFX
FANCD2
Functions
response to ionizing radiation
response to radiation
cellular response to ionizing radiation
DNA recombination
regulation of DNA metabolic process
positive regulation of DNA metabolic process
DNA N-glycosylase activity
BLM
XRCC2
TOPBP1
HUS1
XRCC3
ERCC2
GADD45A
b
RNF168
PCNA
MBD4
H2AFX
FANCD2
Networks
Physical Interactions
Predicted
Co-expression
Genetic Interactions
Pathway
Co-localization
Shared protein domains
BLM
XRCC2
TOPBP1
HUS1
XRCC3
ERCC2
GADD45A
c
SUMO1
RNF168
OGG1
APEX1
MSH3
CHEK1
BBC3
BARD1
RAD18
Functions
response to radiation
DNA recombination
double-strand break repair
damaged DNA binding
response to ionizing radiation
DNA damage checkpoint
DNA integrity checkpoint
MLH1
REV1
BLM
PNKP
H2AFX
UNG
ATM
PPM1D
GADD45A
CIB1
RBBP8
RAD1
DDB2
XRCC2
PRKDC
PMS1
FANCD2
RAD17
d
SUMO1
RNF168
OGG1
APEX1
MSH3
CHEK1
BBC3
BARD1
RAD18
Networks
Physical Interactions
Predicted
Co-expression
Genetic Interactions
Pathway
Co-localization
Shared protein domains
MLH1
REV1
BLM
PNKP
H2AFX
UNG
ATM
PPM1D
GADD45A
CIB1
RBBP8
RAD1
DDB2
XRCC2
PRKDC
PMS1
FANCD2
RAD17
e
ERCC2 ↓
PCNA ↓
SUMO1 ↓
DDB2 ↑
NUCLEOTIDE EXCISION REPAIR
PCNA ↓
MBD4 ↓
APEX1 ↑
PNKP ↓
OGG1 ↑
UNG ↑
MISMATCH REPAIR
BASE EXCISION REPAIR
PCNA ↓
MSH3 ↑
MLH1 ↑
FANCONI ANEMIA PATHWAY
DNA REPAIR
DNA DAMAGE BYPASS
FANCD2 ↓
PCNA ↓
REV1 ↑
RAD18 ↑
DNA DOUBLE-STRAND BREAK REPAIR
NHEJ
HOMOLOGY DIRECTED REPAIR
DNA DOUBLE-STRAND BREAK RESPONSE
H2AFX ↓
RNF168 ↓
ATM ↑
H2AFX ↑
PRKDC ↑
SUMO1 ↓
RNF168 ↓
BARD1 ↑
TOPBP1 ↓
HUS1 ↓
H2AFX ↓
XRCC3 ↓
XRCC2 ↓
PCNA ↓
RNF168 ↓
BLM ↓
RAD17 ↑
RBBP8 ↑
RAD1 ↑
ATM ↑
CHEK1 ↑
H2AFX ↑
SUMO1 ↓
XRCC2 ↑
RNF168 ↓
BARD1 ↑
BLM ↓
H2AFX ↓
RNF168 ↓
ATM ↑
H2AFX ↑
SUMO1 ↓
RNF168 ↓
BARD1 ↑
ATM ↑
CHEK1 ↑
G1/S DNA DAMAGE CHECKPOINTS
RBBP8 ↑
ATM ↑
H2AFX ↑
BLM ↓
MLH1 ↑
H2AFX ↓
BLM ↓
CELL CYCLE CHECKPOINTS
G2/M CHECKPOINTS
MEIOSIS
G2/M DNA DAMAGE CHECKPOINT
ACTIVATION OF ATR IN RESPONSE TO REPLICATION STRESS
TOPBP1 ↓
HUS1 ↓
H2AFX ↓
RNF168 ↓
BLM ↓
RAD17 ↑
RBBP8 ↑
RAD1 ↑
ATM ↑
CHEK1 ↑
H2AFX ↑
SUMO1 ↓
RNF168 ↓
BARD ↑
BLM ↓
HUS1 ↓
RAD17 ↑
RAD1 ↑
CHEK1 ↑
CELL CYCLE
CHROMOSOME MAINTENANCE
H2AFX ↓
PCNA ↓
MITOTIC G1-G1/S PHASES
G1/S TRANSITION
PCNA ↓
G0 AND EARLY G1
PCNA ↓
BBC3 ↓
INTRINSIC PATHWAY OF APOPTOSIS
APOPTOSIS
PROGRAMMED CELL DEATH
FaDu-RR
2A3