Abcam offers a variety of associated reagents and products for cancer research. Our catalog has been extended to include:

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**BRCA pathway**
- Transcriptional regulation
- Molecular interactions
- DNA damage & response

**BRCA1**
- Estrogen inducible DNA damage response genes
- Growth arrest and checkpoint activation
- DNA repair genes
- Chromatin remodeling
- Recombination
- Homologous recombination checkpoints
- Cell cycle

**BRCA2**
- DNA repair, end joining
- Non-homologous recombination
- X-chromosome remodeling
- Homologous recombination
- Cell cycle

**BRCA1**
- DNA damage response genes
- Growth arrest and checkpoint activation
- DNA repair genes
- Chromatin remodeling
- Recombination
- Homologous recombination checkpoints
- Cell cycle

**GADD45**
- DNA damage response genes
- Growth/transforming checkpoint activation
- DNA repair, end joining
- Non-homologous recombination
- X-chromosome remodeling
- Homologous recombination
- Cell cycle

**FLI1**
- DNA damage response genes
- Growth arrest and checkpoint activation
- DNA repair genes
- Chromatin remodeling
- Recombination
- Homologous recombination checkpoints
- Cell cycle

**BACH1**
- DNA damage response genes
- Growth/transforming checkpoint activation
- DNA repair, end joining
- Non-homologous recombination
- X-chromosome remodeling
- Homologous recombination
- Cell cycle

**P53**
- DNA damage response genes
- Growth arrest and checkpoint activation
- DNA repair genes
- Chromatin remodeling
- Recombination
- Homologous recombination checkpoints
- Cell cycle

**C-Myc**
- DNA damage response genes
- Growth arrest and checkpoint activation
- DNA repair genes
- Chromatin remodeling
- Recombination
- Homologous recombination checkpoints
- Cell cycle

**FANCD2**
- DNA damage response genes
- Growth arrest and checkpoint activation
- DNA repair genes
- Chromatin remodeling
- Recombination
- Homologous recombination checkpoints
- Cell cycle

**ESTR**
- DNA damage response genes
- Growth arrest and checkpoint activation
- DNA repair genes
- Chromatin remodeling
- Recombination
- Homologous recombination checkpoints
- Cell cycle

**ATF1**
- DNA damage response genes
- Growth arrest and checkpoint activation
- DNA repair genes
- Chromatin remodeling
- Recombination
- Homologous recombination checkpoints
- Cell cycle
**BRCA1 and BRCA2**

Maintenance of genomic stability

The breast and ovarian cancer susceptibility proteins BRCA1 and BRCA2 were discovered in the 1990s through genetic studies of families with high risk of breast and ovarian cancer linked, the former in particular to Bronte carcinoma. Over the past 15 years, a large body of research has elucidated these proteins in a variety of functions associated with maintenance of genome integrity, including DNA repair, transcription, and centrosome assembly. Although BRCA1 and BRCA2 are large proteins with overlapping functions, they have distinct structural domains and interact with different partners to regulate specific processes.

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**Diagram Description**

The diagram illustrates the various interactions and functions of BRCA1 and BRCA2 proteins, highlighting their roles in DNA repair, transcription, and other cellular processes. The diagram includes:

- **Core Complex**
- **RING Finger Domains**
- **BRCA1-A Complex**
- **BRCA1-C Complex**
- **Linkage to the Fanconi anemia pathway**
- **Functional domains of BRCA1 and BRCA2**

Each section is labeled and provides a visual representation of the proteins' interactions and roles.

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**Key Interactions**

- **BRCA1-B Complex** via BRCT domains: DNA Replication, S-Phase Progression
- **BRCA1-A Complex** via BRCT domains: DNA Damage Signaling, G2/M checkpoint
- **BRCA1-C Complex** via BRCT domains: DNA and resection and G2/M checkpoint control

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**References**

- Adapted from Huen et al., 2010
- Adapted from Wong et al., 2007