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|-----------------------------------------------------------------------------------|-------------------|-----------------------------|--------------|
|  |                   | <b>Technical Data Sheet</b> |              |
| <b>PTEN Control</b><br><b>HybridArray™</b>                                        |                   | Catalog #                   | PTEN-3-1-3-1 |
|                                                                                   |                   | Lot (TMA) #                 | 1691         |
| Intended Use                                                                      | Research Use Only |                             |              |

**Description**      **PTEN Control HybridArray™**

|                           |                                                                                            |                     |
|---------------------------|--------------------------------------------------------------------------------------------|---------------------|
| <b>Catalog Number</b>     | PTEN-3-1-3-1-B (Block)                                                                     |                     |
|                           | PTEN -3-1-3-1 S (Slides)                                                                   |                     |
| <b>Core Composition</b>   | 1. Wild Type                                                                               | Placenta            |
|                           | 2. Intact                                                                                  | Breast CA Cell Line |
|                           | 3. PTEN Loss                                                                               | Melanoma Cell Line  |
| <b>Core Diameter</b>      | 1mm                                                                                        |                     |
| <b>Core Depth</b>         | 3mm                                                                                        |                     |
| <b>Estimated Yield</b>    | Up to 450 sections at 4um                                                                  |                     |
| <b>Baking</b>             | Slides should be baked at 60-65°C for 1-2 hours prior to staining.                         |                     |
| <b>Cells Per Core</b>     | Approximately 2,000 cells are presented in each core on an H&E-stained histologic section. |                     |
| <b>Storage Conditions</b> | 4°C to 25°C                                                                                |                     |
| <b>Stability</b>          | Use blocks within 24 months of the date of manufacture.                                    |                     |
|                           | Slides should be stained within 2 weeks of sectioning.                                     |                     |
| <b>Indication</b>         | Research Use Only                                                                          |                     |
| <b>Country of Origin</b>  | United States                                                                              |                     |



Note: PTEN (Phosphatase and Tensin Homolog) is a tumor suppressor that acts by antagonizing the PI3K/AKT pathway. It can be detected in the nucleus and cytoplasm of most cell types. Loss may occur by a variety of mechanisms, including gene mutation, gene deletion, epigenetic silencing, and microRNA regulation. Loss of PTEN results in AKT activation, which can lead to increased growth and survival of cancer cells. Loss of PTEN is associated with many cancers, including endometrial carcinoma, prostate carcinoma, colon carcinoma, and breast carcinoma, among others. Germline PTEN mutations cause the Cowden's hamartoma syndrome.

Optimal controls for loss of expression proteins, such as PTEN, should contain both positive and negative cases. This HybridArray™ control contains placental tissue in core 1. IHC staining of this tissue shows nuclear and cytoplasmic PTEN reactivity in the cytotrophoblasts, while the syncytiotrophoblasts are negative. Core 2 is a breast carcinoma cell line with intact PTEN expression (95-100% strong nuclear and cytoplasmic reactivity). Core 3 is a melanoma cell line with complete loss of PTEN expression (0% reactivity).