PathGroup
Physician Centered. Patient Focused.

SmartGenomics™ GYN Profile

Oncology Services

Clinical to Genomic

Advanced Standard of Care

PathGroup SmartGenomics: GYN is designed for ***use at diagnosis*** of primary or metastatic cervical, endometrial or ovarian carcinoma to uncover therapeutic options and aid in treatment planning to improve patient outcomes.

- **Facilitates selection of appropriate clinical trials as recommended by NCCN guidelines**
- Clinically actionable genomic information for 44 gene mutations, FISH, IHC, and CMA analysis from a single biopsy
- Fully integrated testing on every case for a complete patient picture

Tailored Genomic GYN Profile

Next Generation Sequencing (NGS)	
AKT1	Therapeutic implications in ovarian cancers via PI3K/AKT/mTOR inhibition
APC	Ovarian carcinomas with deregulation of APC is an indicator of good prognosis
AR	Evidence suggests that AR mutation may contribute to epithelial ovarian cancer pathogenesis
BRAF	Associated with early stage disease and improved outcome in patients with low-grade serous ovarian cancer
BRCA1/2	Somatic mutations predictive of response to PARP inhibitors
CCND1	Potential target in drug development
CDH1	Co-occurrence with BRCA mutation
CDK4/6	Targetable mutation through CD4/6 inhibition
CHEK2	Acts as a tumor-suppressor gene in various gyn cancers
CTNNB1	Implicated in activation of the Wnt signaling pathway in ovarian carcinoma
EGFR	Potentially targetable, documented in high grade serous ovarian carcinoma
ERBB2/4	Potential role in chemotherapeutic resistance and targeted therapy development
ESR1	Rarely reported in ovarian carcinoma
FGFR1/2/3	Activated signaling recently reported as driver, potentially targetable
FLT3	Can be downregulated through CDK6 inhibition
GATA3	Acts as a tumor suppressor gene in gyn cancers
HRAS	Ras pathway activation suspected to be related to oncogenesis in mucinous ovarian cancer
JAK3	Deregulation by activating mutations shown to confer invasive growth advantage
KDR	Frequent mutation in serous ovarian carcinoma
KIT	Potential target in various gyn malignancies
KMT2D	Maintains neoplastic cell proliferation, potential therapeutic target
KRAS	Ras pathway activation suspected to be related to oncogenesis in mucinous ovarian cancer
MET	Mutation reported in ~7% of ovarian carcinoma, therapeutic target
MLH1	Reported in both primary and recurrent epithelial ovarian cancer
NPM1	Commonly seen in serous ovarian cancer, potentially targetable
NRAS	Ras pathway activation suspected to be related to oncogenesis in mucinous ovarian cancer

(profile components listing continued on back)

PDGFRA	Potential target in various gyn malignancies
PIK3CA	Activating mutations contribute to ovarian cancer development and tumorigenesis
PTCH1	Potentially targetable through hedgehog pathway inhibition
PTEN	Common mutation in clear cell and mucinous ovarian carcinoma, PTEN deficiency modulates drug sensitivity and resistance
PTNP11	Thought to play a role in intrinsic and acquired resistance to targeted cancer drugs
RB1	prognostic values in epithelial ovarian cancer
SETD2	Mutations make cancer cells vulnerable to drug inhibiting the protein WEE1
SMAD4	Tumor suppressor gene with prognostic value
SMO	Potentially targetable through hedgehog pathway inhibition
SRC	Targetable in various gyn malignancies
TP53	Associated with more aggressive disease and worse overall survival
TSC1/2	Potential prediction of response to mTOR inhibition
Fluorescence In Situ Hybridization (FISH)	
HER2(ERBB2)	Predictive of possible response to traztuzumab
Immunohistochemistry (IHC)	
ER	Response to hormonal therapy
PR	Response to hormonal therapy
HER2	Predicitve of possible response to traztuzumab
Cytogenomic Microarray (CMA)	
Whole genome copy number changes in >22,000 genes, 500 of which are implicated in cancer	