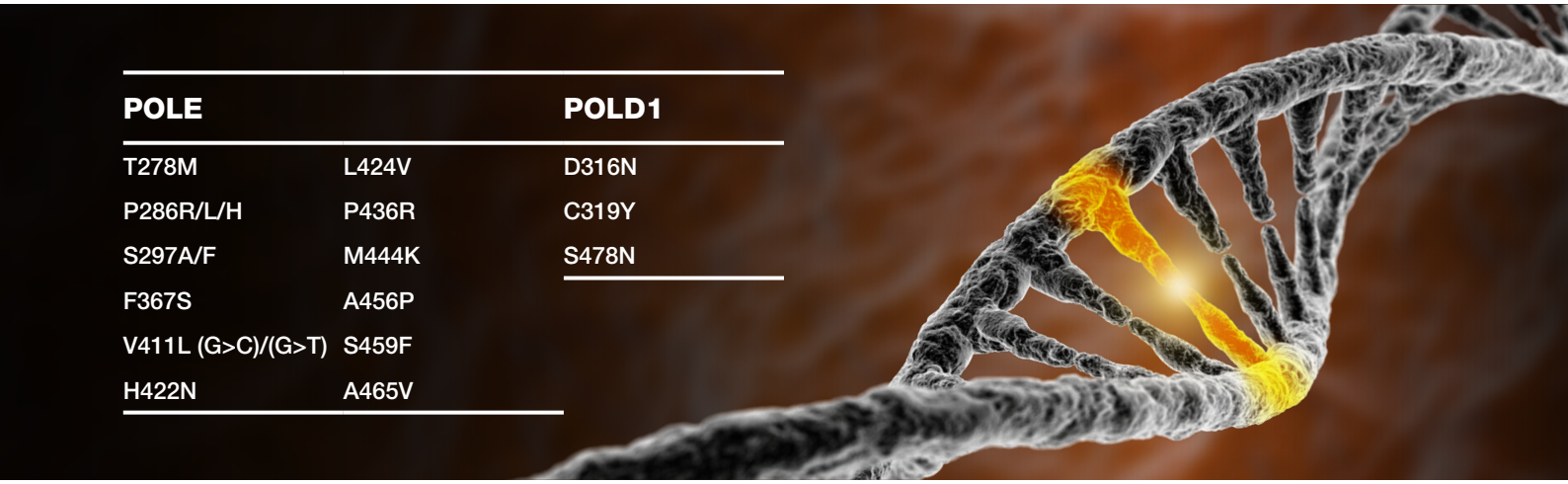
MODAPLEX POLE/POLD1 Mutation Analysis Kit

POLE mutations relevant for detecting an ultramutated state



POLE		POLD1
T278M	L424V	D316N
P286R/L/H	P436R	C319Y
S297A/F	M444K	S478N
F367S	A456P	
V411L (G>C)/(G>T)	S459F	
H422N	A465V	

FEATURES

- Detect and differentiate 16 POLE and 3 POLD1 mutations in one well
- Save valuable FFPE tissue due to low DNA input amount (4 ng)
- Obtain precise insights from a test developed using clinical endometrial and colorectal cancer samples.

AN IMPROVED TESTING WORKFLOW

- Take advantage of an easy and fast workflow with 4 h turnaround time
- Benefit from an integrated control concept ensuring high accuracy
- Use the intuitive MODAPLEX Reporter software for a simple data analysis experience

POWERFUL MODAPLEX PLATFORM

- High multiplexing grade in a single well
- Universal PCR program for running all three assays on one plate simultaneously
- The MODAPLEX setup is as straightforward as setting up a PCR
- Simple analysis with the intuitive MODAPLEX Reporter software

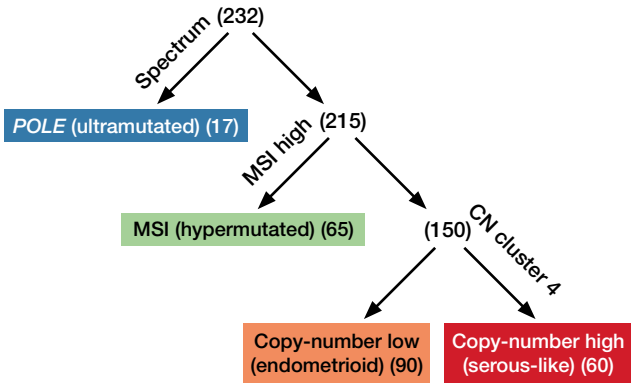
www.modaplex.biotype.de

BIOTYPE

POLE/POLD1 mutations relevant for detecting ultramutated tumors

Inactivating mutations in the exonuclease domain of the catalytic subunits of the DNA polymerases epsilon and delta 1 (POLE and POLD1) lead to impaired proofreading during DNA replication and consequently to dramatically increased mutation rates of ≥ 100 mut/Mb[1]. Consequently, pathogenic POLE and POLD1 mutations are now being evaluated as potential predictive biomarkers of response to immune checkpoint therapies that may complement MSI testing[2,3,4].

The Cancer Genome Atlas Research Network (TCGA) performed an integrated genomic, transcriptomic, and proteomic characterization of endometrial cancer. Four distinct genomic subgroups were identified that also correspond to clinical prognosis, with the novel POLE ultramutated group being of particular interest due its favorable outcomes[5]. This molecular classification has now been incorporated into endometrial carcinoma guidelines, published by the European Society of Gynaecological Oncology (ESGO), the European Society of Pathology (ESP) and ESMO[6,7].



Adapted from Levine et al (14) 10.1038/nature12113

Detection and differentiation of nineteen (19) somatic and rare germline mutations in the polymerase epsilon and polymerase delta-1 exonuclease domains is effectively achievable using the MODAPLEX POLE/POLD1 Mutation Analysis Kit. The test enables researchers to advance promptly in clinical research, as the test is optimized to evaluate POLE and POLD1 mutations that have been described to be:

- primarily associated with ultramutation resulting in a high mutational burden and a very distinct mutational pattern[2, 3, 10, 11, 12]
- found predominantly in colorectal and endometrial cancer, but have also been reported for gastric, breast, ovarian, lung and brain cancers[2, 8, 9, 12]
- associated with a high expression of immune-checkpoint proteins and T-cell markers[3,12,13]

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ORDER INFORMATION

Product	Size	Cat. No.	Status
MODAPLEX POLE/POLD1 Mutation Analysis Kit	50 reactions	85-10101-0050	RUO*

*RUO - Research Use Only products must be validated by the customer with clinically relevant material for diagnostic purposes.

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