

Ngeow et al. Utility of PTEN protein dosage in predicting for underlying germline *PTEN* mutations amongst patients presenting with thyroid cancer and Cowden-like phenotypes

Supplemental Table 1: Clinical operational diagnostic criteria for Cowden syndrome*

Criteria		
Pathognomonic Criteria	Adult Lhermitte-Duclos disease (LDD) (cerebellar tumors)	
	Mucocutaneous lesions	Trichilemmomas, facial
		Acral keratoses
		Papillomatous papules
Major Criteria	Breast Cancer	
	Thyroid Cancer (non-medullary)	
	Macrocephaly (megalcephaly) (i.e. 97th percentile and above)	
	Endometrial cancer	
Minor Criteria	Other thyroid lesions (e.g. adenoma, multinodular goiter)	
	Mental retardation (i.e. IQ of 75 and below)	
	Gastrointestinal hamartomas	
	Fibrocystic disease of the breast	
	Lipomas	
	Fibromas	
	Genitourinary tumors (especially renal cell carcinoma)	
	Genitourinary malformations	
Uterine Fibroids		
Operational Diagnosis in an individual	<p>Any of the following:</p> <ul style="list-style-type: none"> - Mucocutaneous lesions alone if there are six or more facial papules of which 3 must be trichilemmomas, or - Cutaneous facial papules and oral mucosal papillomatosis, or - Oral mucosal papillomatosis and acral keratoses, or - Six or more plantar keratoses, or <p>Two or more major criteria of which one must be macrocephaly or LDD, or</p> <p>One major and ≥ 3 minor criteria or</p> <p>Four or more minor criteria</p>	
Operational diagnosis in a family where one individual is diagnostic for CS	<p>Any one pathognomonic criterion</p> <p>Any one major criteria with or without minor criteria</p> <p>Two minor criteria</p> <p>History of Bannayan-Riley-Ruvalcaba syndrome</p>	

*International Cowden Consortium (same as NCCN 2006)

Supplemental Table 2 : PTEN Light Scanner Primers and Annealing Temperatures (°C)

Name	Sequence 5' -> 3'	Annealing Temp (°C)
PTEN LS E1F PTEN LS E1R	GCAGCTTCTGCCATCTC GCATCCGTCTACTCCCAC	66
PTEN LS E2F PTEN LS E2R	AGTATTCTTTTAGTTTGATTGCTGC CTAAATGAAAACACAACATGAATATAAACA	60
PTEN LS E3F PTEN LS E3R	ATGTTAGCTCATTTTTGTTAATGGTG CAAGCAGATAACTTTCACTTAATAGTTG	60
PTEN LS E4F PTEN LS E4R	TTTTTCTTCCTAAGTGCAAAGATAAC CAGTAAGATACAGTCTATCGGGT	60
PTEN LS E5F PTEN LS E5R PTEN LS E5SeqF	ACCTACTTGTTAATTAATAAATTCAAGAGTT ATCCAGGAAGAGGAAAGGAAA TGCAACATTTCTAAAGTTACCTACTTG	60
PTEN LS E6F PTEN LS E6R	CCCAGTTACCATAGCAATTTAGTGA TAGATATGGTTAAGAAAAGTTCCAATAC	60
PTEN LS E7F PTEN LS E7R	CAGTTTGACAGTTAAAGGCATTTT AATATAGCTTTTAATCTGTCCTTATTTTGG	61
PTEN LS E8.1F PTEN LS E8.1R	TTTGTTGACTTTTTGCAAATGTTTAACATA ATTTCTTGATCACATAGACTTCCA	61
PTEN LS E8.2F PTEN LS E8.2R	GTAATACATTCTTCATACCAGGACC GCTGTA CTCTAG AATTAACACAC	61
PTEN LS E9F PTEN LS E9R PTEN LS E9SeqF PTEN LS E9SeqR	AAGATGAGTCATATTTGTGGGTT TTTCAGTTTATTCAAGTTTATTTTCATGG AGATGAGTCATATTTGTGGGTTTT AAAGGTCCATTTTCAGTTTATTCAA	61 For sequencing For sequencing
PTEN LS SNP E8.2F PTEN LS SNP E8.2R PTEN LS SNP E8.2 Probe	GCAAATAAAGACAAAGCCAACCGA AGCTGTA CTCTAG AATTAACACACATC CATACAAGTCACCAACCCCCAC-block	60 For Intronic 8 SNP