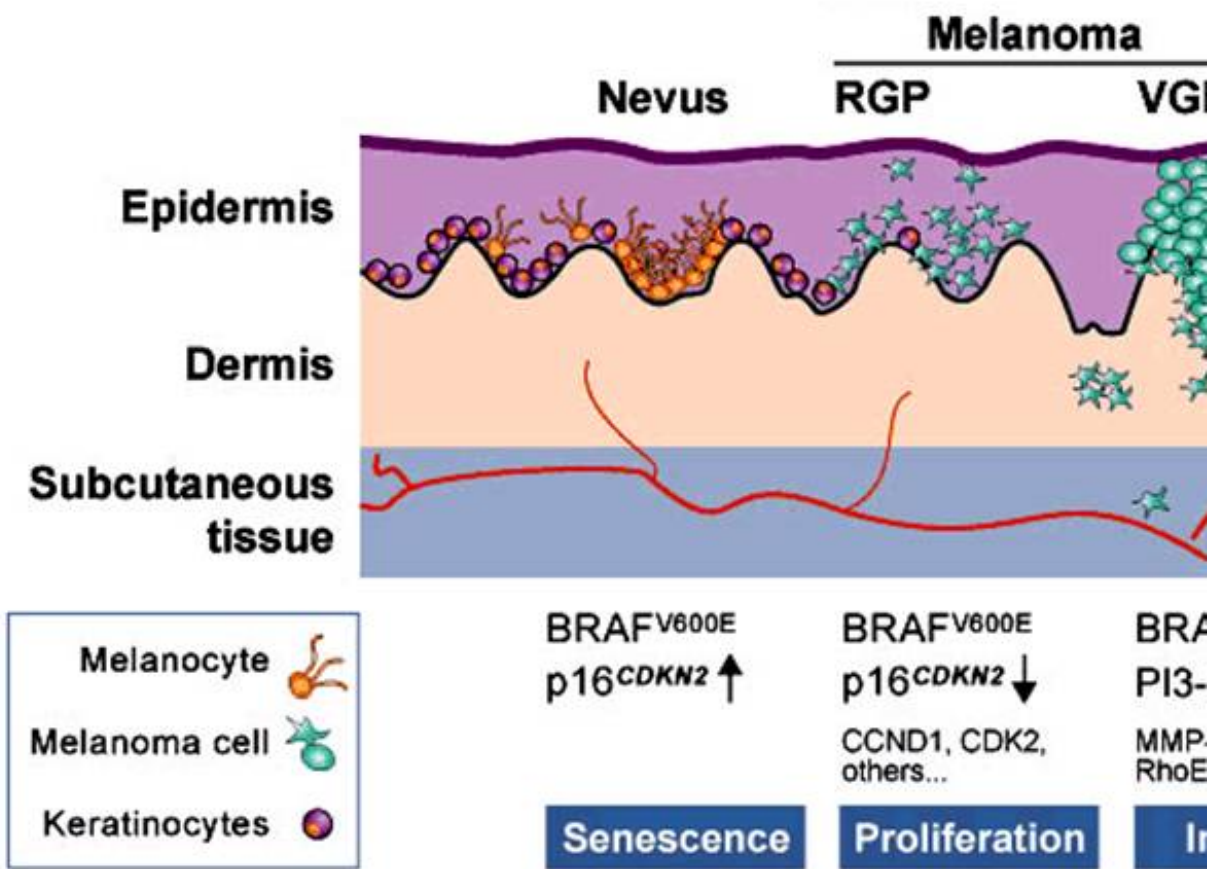


## Molecular analysis of melanoma biopsy for prognosis and

### RELATIVE GENE EXPRESSION

<u>GENE</u>	<u>RELEVANCE</u>
• BRAF V600E	(Vemurafenib targeted therapy)
• CD20	(Rituximab targeted therapy)
• CTLA4	(Ipilimumab targeted therapy)
• FOXM1	(Proteasome inhibitors targeted therapy)
• EGFR	(Prognosis, targeted therapy)
• ERBB2	(Prognosis, targeted therapy)
• ERBB3	(Resistance to therapies)
• MET	(Invasion, targeted therapy)
• VEGFR2	(Angiogenesis, antiangiogenic therapy)
• PDGFR $\alpha$	(Imatinib therapy)
• C-KIT	(Imatinib therapy)
• IGF1R	(IGF-1 signaling and novel targeted therapies)
• CXCR4	(Prognosis)
• CD133	(Cancer stem cells identification, prognosis)
• CYCLIN D1	(Proliferation, prognosis)
• PTEN	(Resistance to targeted therapies, prognosis)
• OSTEOPONTIN	(Prognosis)
• SURVIVIN	(Apoptosis, resistance to therapies)
• p16	(Prognosis)
• PI3K $\alpha$	(Prognosis)
• AKT	(Prognosis)
• mTOR	(Targeted therapy)
• DNMT1	(DNA methylation , prognosis)

Proposed molecular alterations during the initiation and progress



RGP=radial growth phase; VGP=vertical growth phase;  
 MMP-1=matrix metalloproteinase-1; HIF-1 $\alpha$ =hypoxia inducible factor-1 $\alpha$ .

## RELATIVE QUANTITATIVE GENE EXPRESSION FOR RESPONSE TO CHEMOTHERAPY

- *BCRP* (cisplatin/carboplatin, irinotecan, topotecan)
- *MRP1* (cyclophosphamide, etoposide, vincristine)
- *ERCC1, BRCA1* (platinum)
- *TYMS* (5-FU, capecitabine, pemetrexed)
- *PGP* (doxorubicin, paclitaxel, etoposide, vincristine)
- *RRM1, RRM2* (gemcitabine)
- *TUBB3* (taxanes)
- *MGMT* (temozolomide)

- *TOPO2A* (doxorubicin, epirubicin)
- *TOPO1* (irinotecan, etoposide)

**HIGH EXPRESSION**



**RESPONSE**