



**Supplemental figure 1:**

Upper panel: IHC for Thyroglobulin (TG), PAX-8, Thyroid transcription factor 1 (TTF-1) and Sodium iodine symporter (NIS) on thyroid tissues treated for 10 days with 5 mg/kg of PD-0325901.

Lower Panel: Score of the depicted IHC, individual values with mean and SEM (0= Negative, 1=weak positive, 2=Positive, 3=strongly positive, 4=very strong positive).

### Supplemental Material and Methods:

IHC stains were obtained by automatized stainings with a Leica immunostainer following the protocol described here: Berezowska S, Galván JA. *Methods Mol Biol.* 2017;1560:189-194. doi: 10.1007/978-1-4939-6788-9\_13. PMID: 28155154.

The following antibodies and specific conditions were used:

Antibody	Dilution	Antigen retrieval	Host	incubatin time	Polymer	DAB chromogen(*)	Comany	Ref. Number
TG	1:10000	Tris buffer 30 min 95º	Rb	15min	8min	8min	Dako	A0251
PAX8	1:1200	Tris buffer 30 min 95º	Rb	15min	8min	8min	Proteintech	10336-1-AP
TTF1	1:50	Tris buffer 30 min 95º	Rb	30min	15min	10min	Santa Cruz	sc-13040
NIS	1:50	Tris buffer 30 min 95º	Rb	30min	15min	10min	Abbiotec	250552
<b>Visualization Kits</b>								
Bond Polymer		Leica Biosystems	DS9800					
Refine Detection (*)								
<b>Autostainer</b>								
Leica BOND RX		Leica Biosystems						

	total (ATC)	BRAF	frequency	PI3K	frequency	BRAF/PI3K	frequency
Pozdeyev et al.	196	84	43%	29	15%	23	12%
Kunstman et al.	22	6	27%	2	9%	2	9%
Landa et al.	33	15	45%	6	18%	5	15%
<b>TOTAL</b>	<b>251</b>	<b>105</b>	<b>42%</b>	<b>37</b>	<b>15%</b>	<b>30</b>	<b>12%</b>

### Supplemental table 1:

Analysis of BRAF and PI3K mutations occurrence in thyroid cancers.

Data extracted from:

Pozdeyev N, Gay LM, Sokol ES, et al. Genetic analysis of 779 advanced differentiated and anaplastic thyroid cancers. *Clin Cancer Res.* 2018.

Landa I, Ibrahimasic T, Boucai L, et al. Genomic and transcriptomic hallmarks of poorly differentiated and anaplastic thyroid cancers.

*J Clin Invest.* 2016 and Kunstman JW, Christofer Juhlin C, Goh G, et al. Characterization of the mutational landscape of anaplastic thyroid cancer via whole-exome sequencing. *Hum Mol Genet.* 2015.