

## FusionPlex<sup>®</sup> ALK RET ROS1 v2

**Part # SK0081**

### Description

The FusionPlex<sup>®</sup> ALK RET ROS1 v2 panel is an optimized, balanced pool of gene-specific primers (GSPs) that is used in conjunction with FusionPlex Reagents and Molecular Barcode (MBC) Adapters to produce targeted NGS libraries.

FusionPlex<sup>®</sup> ALK RET ROS1 v2 contains **29** GSPs targeting **3** genes commonly mutated in many solid tumor type cancers.

### Contents

Description	Part Number	Storage Conditions
Archer <sup>®</sup> FusionPlex <sup>®</sup> ALK RET ROS1 Panel v2 GSP1 - 8 reactions	SA0085	-20°C ± 10°C
Archer <sup>®</sup> FusionPlex <sup>®</sup> ALK RET ROS1 Panel v2 GSP2 - 8 reactions	SA0086	
10X VCP Primer Mix	SA0126	

### Recommended Reads and Multiplexing

The recommended sequencing depth for FusionPlex<sup>®</sup> ALK RET ROS1 v2 libraries is **1,000,000** reads per sample.

### Assay Targets

Gene	Accession	Exon	Assay Type	Direction
ALK	NM_004304	19, 20, 21, 22	Fusion	5'
ALK	NM_004304	C1156Y <sup>iii</sup> , G1202R <sup>iv</sup> , D1203N <sup>vi</sup> , S1203V <sup>iv</sup> , F1174L <sup>iii</sup> , L1196M <sup>iii-iv</sup> , G1269A <sup>i</sup>	Mutation	N/A
RET	NM_020975	8, 9, 10, 11, 12, 13	Fusion	5'
RET	NM_020975	V804M/L <sup>vi</sup>	Mutation	N/A
ROS1	NM_002944	31, 32, 33, 34, 35, 36, 37	Fusion	5'

## References

- i. Katayama R et al., 2012. Mechanisms of acquired crizotinib resistance in ALK-rearranged lung Cancers. *Sci. Transl. Med.* 4(120):120ra17 (2012).
- ii. Sasaki et al., A novel ALK secondary mutation and EGFR signaling cause resistance to ALK kinase inhibitors. *Cancer Res.* 71(18):6051-60 (2011).
- iii. Doebele et al., Mechanisms of resistance to crizotinib in patients with ALK gene rearranged in non-small cell lung cancer. *Clin. Cancer Res.* 18(5):1472-82 (2013).
- iv. Sasaki et al., The neuroblastoma-associated F1174L ALK mutation causes resistance to an ALK kinase inhibitor in ALK-translocated cancers. *Cancer Res.* 70(24):10038-43 (2010).
- v. Heuckman et al., ALK mutations conferring differential resistance to structurally diverse ALK inhibitors. *Clin. Cancer Res.* 17(23):7394-401 (2011).
- vi. Carlomagno et al., Disease associated mutations at valine 804 in the RET receptor tyrosine kinase confer resistance to selective kinase inhibitors. *Oncogene.* 12;23(36):6056-63 (2004).

## Archer Analysis Settings

Sequencing data should be processed using **Archer Analysis** (v5.0 or greater). The FusionPlex® ALK RET ROS1 v2 panel requires selection of the **RNA Fusion** pipeline, found under the RNA Analysis Type in Archer Analysis. The **RNA SNP/InDel** pipeline may optionally be chosen as well (see the software user manual for further details on setting up analyses).

## Limitations of Use

**For Research Use Only.** Not for use in diagnostic procedures. Not intended to be used for treatment of human or animal disease.

Safety data sheets pertaining to this product are available upon request.

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ArcherDX, Inc.  
2477 55th Street, Suite 202  
Boulder, CO 80301  
303-357-9001  
<http://www.archerdx.com>