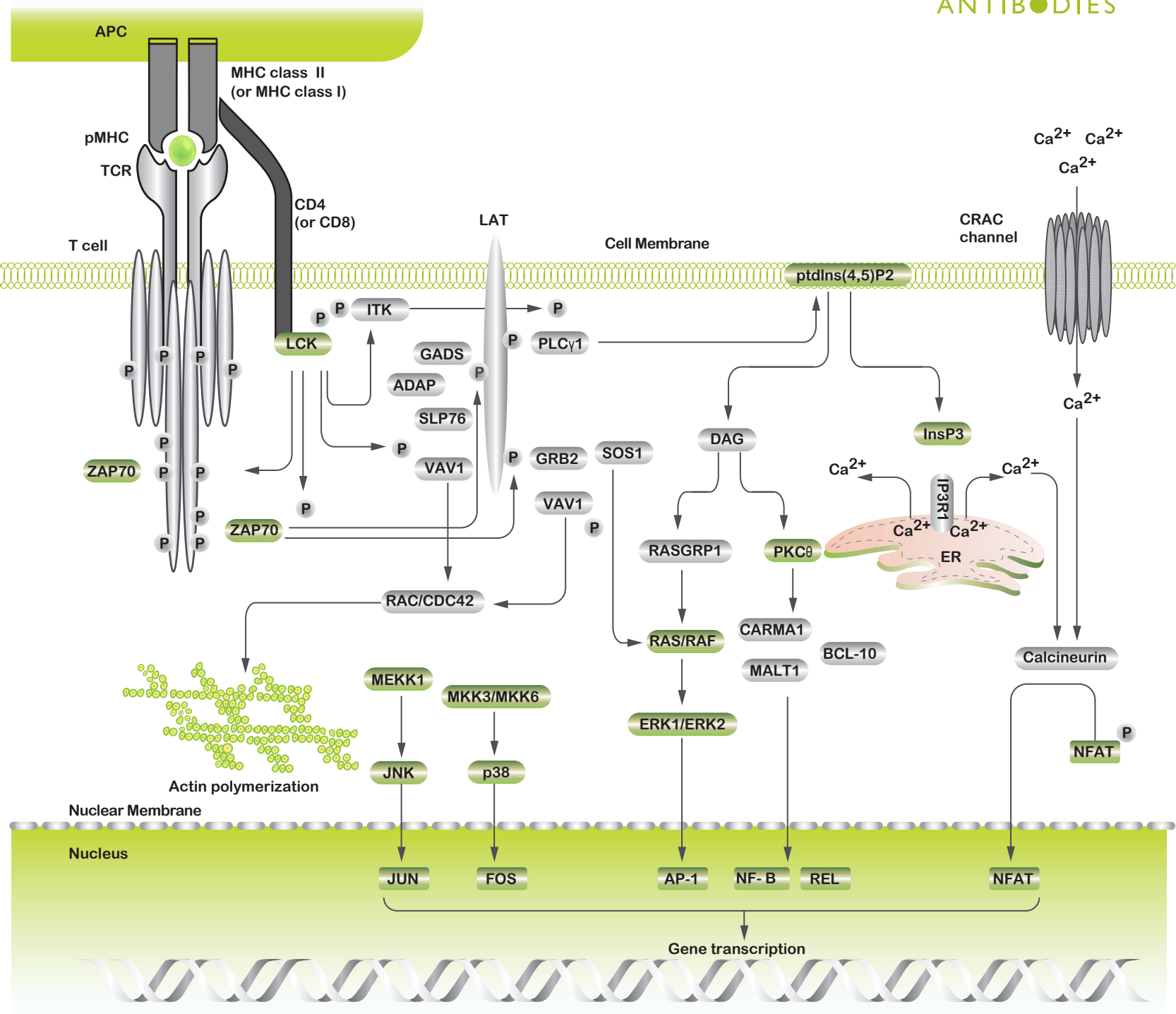


T Cell Receptor(TCR) Signaling



T cells are a subset of lymphocytes that play a crucial role in immune response. T-cell receptor (TCR) is a complex of integral membrane proteins on the surface of T cells, which takes part in the activation of T-cells in response to an antigen. Activation of TCR is triggered by major histocompatibility complex (MHC) molecules and regulated by various co-stimulatory receptors (e.g. CD28). Many transmembrane receptors also modulate specific elements of TCR signaling. Upon engagement of the TCR by antigen presented on MHC molecules, the Src family kinase Lck is activated by the interaction of MHC-II and CD4 or CD8, and proceeds to ITAMs on the α , β , and ζ subunits of the TCR/CD3 complex. Phosphorylated ITAMs recruit zeta-chain associated protein kinase (ZAP-70) to the TCR/CD3 complex where it becomes activated, promoting recruitment and phosphorylation of downstream adaptor or scaffold proteins. The linker for activation of T cells (LAT) and leukocyte protein SLP-76 are two main substrates of ZAP-70. Phosphorylated LAT and SLP-76 result in recruitment of a number of other proteins involved in activation of the calcium mobilization (Calcineurin, NFAT), RAS/RAF pathway (RAS, RAF, ERK, AP-1), PKC-NF- κ B pathway, MAPK pathway (JNK, p38) and cytoskeletal reorganization.

Key Products for T Cell Receptor Signaling

Target Name	Cat.No.	Reactivity	Applications	Citations
CD3E	bs-0765R	Human,Mouse,Rat	IHC,IF,FCM	PubMed
CD4	bs-0647R	Human,Mouse,Rat	WB,IHC-P,FCM	PubMed
CD8	bs-0648R	Human,Mouse	WB,IHC-P	PubMed
CD28	bs-1297R	Human,Mouse,Rat	WB,IHC-P,FCM	PubMed
PD-1	bs-1867R	Human,Mouse,Rat	WB	PubMed
CTLA4	bs-10006R	Human,Mouse,Rat	WB FCM	PubMed
Zap-70	bs-1942R	Human,Mouse	WB,FCM	
Phospho-ZAP70 (Tyr315 + Tyr319)	bs-3478R	Human,Mouse	WB,FCM	
phospho-SLP76 (Tyr113)	bs-13663R	Human,Mouse	WB	
phospho-LCK (Tyr394)	bs-5406R	Human	WB	
Phospho-PLC gamma 1 (Tyr783)	bs-3343R	Human,Mouse,Rat	WB,IHC-P	PubMed
CDC42	bs-3555R	Human,Mouse,Rat	WB,IHC-P	
PKCθ	bs-4161R	Human,Mouse,Rat	WB,IHC-P	
phospho-PRKCQ (Thr538)	bs-5585R	Human,Mouse,Rat	WB	PubMed
IKK alpha + IKK beta	bs-10123R	Human,Mouse,Rat	WB,IHC-P	
Phospho-IKK alpha/beta (Ser176 + Ser180)	bs-3237R	Human,Mouse,Rat	WB,IHC-P	PubMed
JNK1+JNK2+JNK3	bs-2592R	Human,Mouse,Rat	WB,IHC-P,FCM	PubMed
Phospho-JNK1 + 2 + 3 (Thr183+Tyr185)	bs-1640R	Human,Mouse,Rat	WB,IHC-P,FCM	PubMed
P38 MAPK	bs-0637R	Human,Mouse,Rat	WB	PubMed
Phospho-P38 MAPK (Thr180 + Tyr182)	bs-0636R	Human,Mouse,Rat	WB	PubMed
AKT1+2+3	bs-6951R	Human,Mouse,Rat	WB,FCM	PubMed
AKT	bsm-33278M	Human	WB	
AKT	bsm-33282M	Human	WB	
Phospho-AKT (Ser473)	bs-0876R	Human,Mouse,Rat	WB,IHC-P	PubMed
ERK1 + ERK2	bs-2637R	Human,Mouse	WB,IHC-P	PubMed
Phospho-ERK1/2 (Thr202 + Tyr204)	bs-3016R	Human,Mouse,Rat	WB,IHC-P,IF	PubMed
NFκB p65	bs-20355R	Human,Mouse,Rat	WB,IHC-P,FCM	
Phospho-NFκB p65 (Ser536)	bs-0982R	Human,Mouse,Rat	WB,IHC-P,FCM	PubMed
c-Jun	bs-0670R	Human,Mouse,Rat	WB,IHC-P,FCM	PubMed
Phospho-c-Jun (Thr249)	bs-5462R	Human	FCM	
Phospho-c-Jun (Thr91)	bs-5458R	Human	WB,FCM	

WB=Western Blot; IHC-P=Immunohistochemistry with Paraffin-Embedded Tissue Slides; IF=Immunofluorescence; FCM=Flow cytometry