

TIM FAMILY PROTEINS

**EMBO Signalling Course
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TIM

(T cell Ig and Mucin domain Proteins)

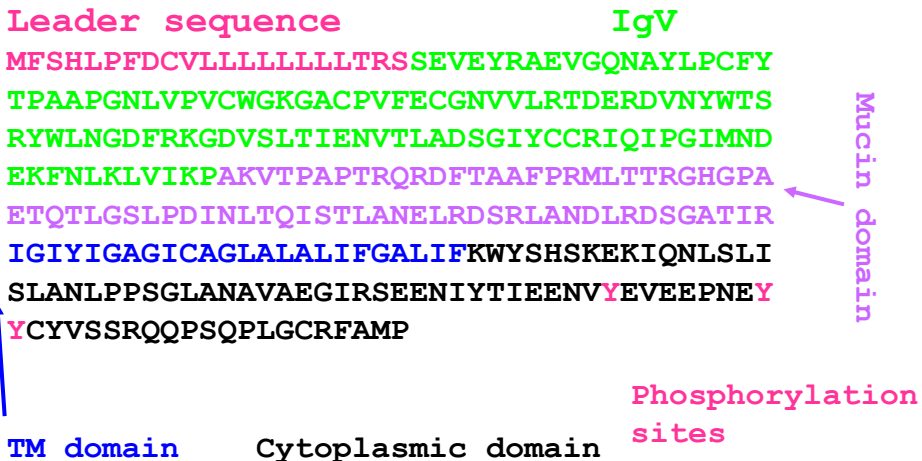
Human: TIM1 = HAVCR
 KIM1 (Kidney injury molecule)
 TIM3 = ?
 TIM4 = (Smuckler) Secondary lymphoid tissue
 (RGD motif and Lymphotoxin signalling)

Mouse: Tim1 = Th2 cells
 Tim2 = ?
 Tim3 = Th1 cells
 Tim4 = RGD motif

TIM (T cells Ig and Mucin)

- *TIM* genes are located on human chromosome 5q33 — a region linked to asthma susceptibility.
- TIM1 is expressed by CD4+ TH2 cells
- TIM3 is expressed by TH1 cells
- Human TIM1 functions as a receptor for hepatitis A virus.

Human Tim3



Phosphorylation sites

• MNQIQVFISGLILLPLGAVESHAVQGLAGHPVTLPCIYSTHLGGIVPMCWGLGECRHSYCIRSLIWTNGYTVTHQRNSR 80
 YQLKGNISEGNVSLTIENIVVGDGGPYCCVVEIPGAFHFVDYMLEVKPEIISTSPPTRPATGRPTTISTRSTHVPTSTRV 160
 STSTSPPTAHTETKYKPEATTFYPDQTTAEVETLDPDTPADWHNTVTSDDDPWDDNTEVIPPQKPKNLNKGfyVGISIAA 240
 LLILMLLSTMVITRYVVMKRKSESLSFVAFPIISKIGASPKKVVERTRCEDQVYIIEDTYPPEEES 320

•S.....S 80
 Y.....T.....T.....T.T...TT.S...ST...ST... 160
 STS.S.....TY.....T.....TT.....T.....T.S.....Y..... 240
S.S.S.....S.....T.....Y.....T.Y..... 320

• Phosphorylation sites predicted:

- Ser: 13
- Thr: 17
- Tyr: 5

TIM molecule on T cells, MΦ or DCs

