

## **MOPC21 IG nucleotide sequences and Fab 3D structure**

Marie-Paule Lefranc (23/07/08)

### **1) MOPC21 nucleotide sequences**

Three transcripts were identified in MOPC21: two productive (IGH and IGK) and one unproductive (IGK).

#### **1.1. IGH productive transcript**

IGH productive transcript (IGHV5-17\*02-IGHD2-1\*01-IGHJ4\*01): J00522 in IMGT/LIGM-DB (gene and allele assignment confirmed in the Fab 3D structure ligc in IMGT/3Dstructure-DB).

#### **1.2. IGK productive transcript**

IGK productive transcript (IGKV6-20\*01-IGKJ2\*01): M12184 (gene and allele assignment and functionality were deduced from the Fab 3D structure ligc in IMGT/3Dstructure-DB as this transcript is partial and only contains part of the V-REGION (131 nt, codons 45-97 according to the IMGT unique numbering).

#### **1.3 IGK unproductive transcript**

IGK unproductive transcript due to an out-of-frame junction: M35669, X05184, K00888 (IGKV3-12\*01-IGKJ2\*01)

## 2) MOPC21 3D structure Fab

IMGT/3Dstructure-DB :ligc

### 2.1. Heavy chain

#### VH+CH1+H (5AA) sequence

DVQLVESGGGLVQPGGSRKLSCAASGFTFSSFGMHWVRQAPEKGLEWVAYISSG  
SSTLHYADTVKGRFTISRDNPKNTLFLQMTSLRSEDTGMYYCARWGNYPYAMD  
YWGQGTSVTVSSAKTTPPSVYPLAPGSAAQTNSMVTLGCLVKGYFPEPVTVTWN  
SGSLSSGVHTFPAVLQSDLYTLSSSVTVPSPPRPSETVTCNAHPASSTKVDKK  
IVPRD

#### VH with gaps according to the IMGT unique numbering

DVQLVESGG.GLVQPGGSRKLSCAASGFTF...SSFGMHWVRQAPEKGLEWVA  
YISSG..SSTLHYADTVK.GRFTISRDNPKNTLFLQMTSLRSEDTGMYYCARWG  
NYPYAMDYWGQGTSVTVSS

A100>G100 (IMGT numbering)by comparison with J00522.

Note that an Ala was also found at position 100 in the peptides characterizing the disulfide bridge (C23 and C104 in the IMGT numbering) (Svasti J and Milstein C. Biochem J. 126, 837-850 (1972)[PMID: 5073237](#)).

K-L-S-C-A-A-S-G .....S-E-D-T-A-M-Y-Y-C-A-R

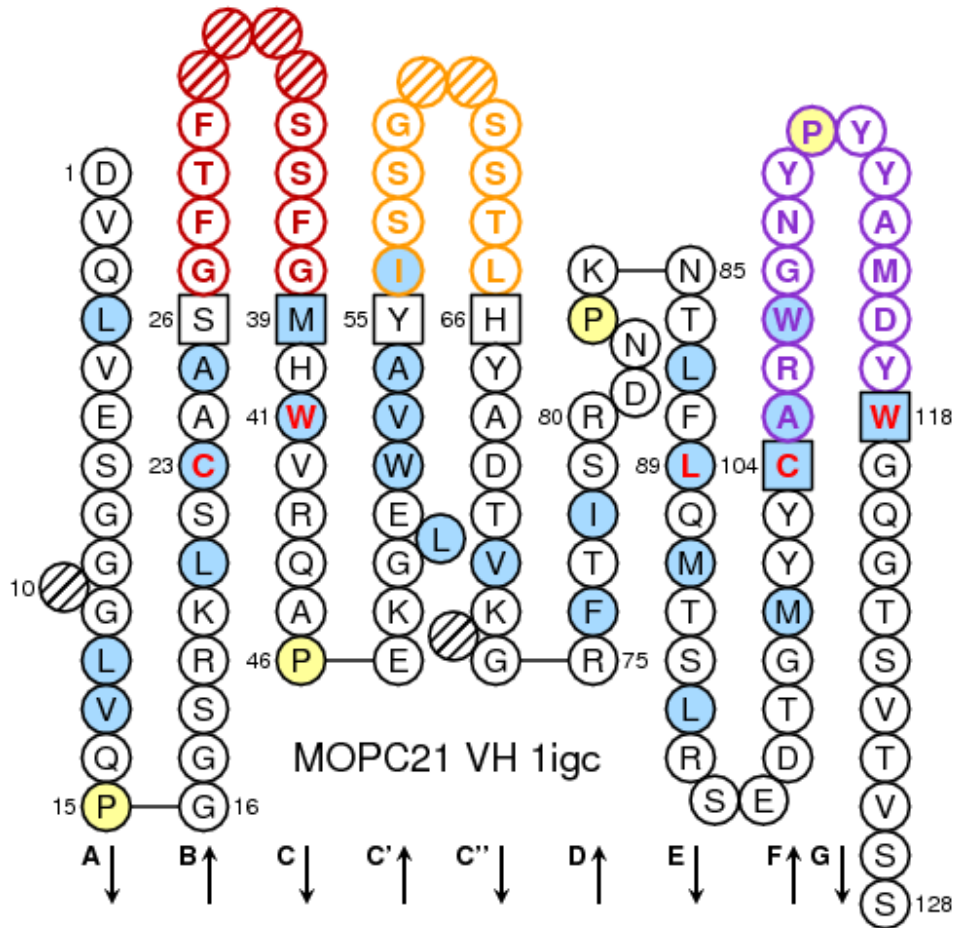
#### CH1 with gaps according to the IMGT unique numbering

....AKTTPPSVYPLAPGSAAQT...NSMVTLGCLVKGYFP..EPVTVTWNSGS  
LSS....GVHTFPAVLQSD.....LYTLSSSVTVPSPP...RPSETVTCNA  
HPA..SSTKVDKKI

#### hinge

VPRD

IMGT Collier de Perles for the MOPC21 VH domain



2.2. Light chain

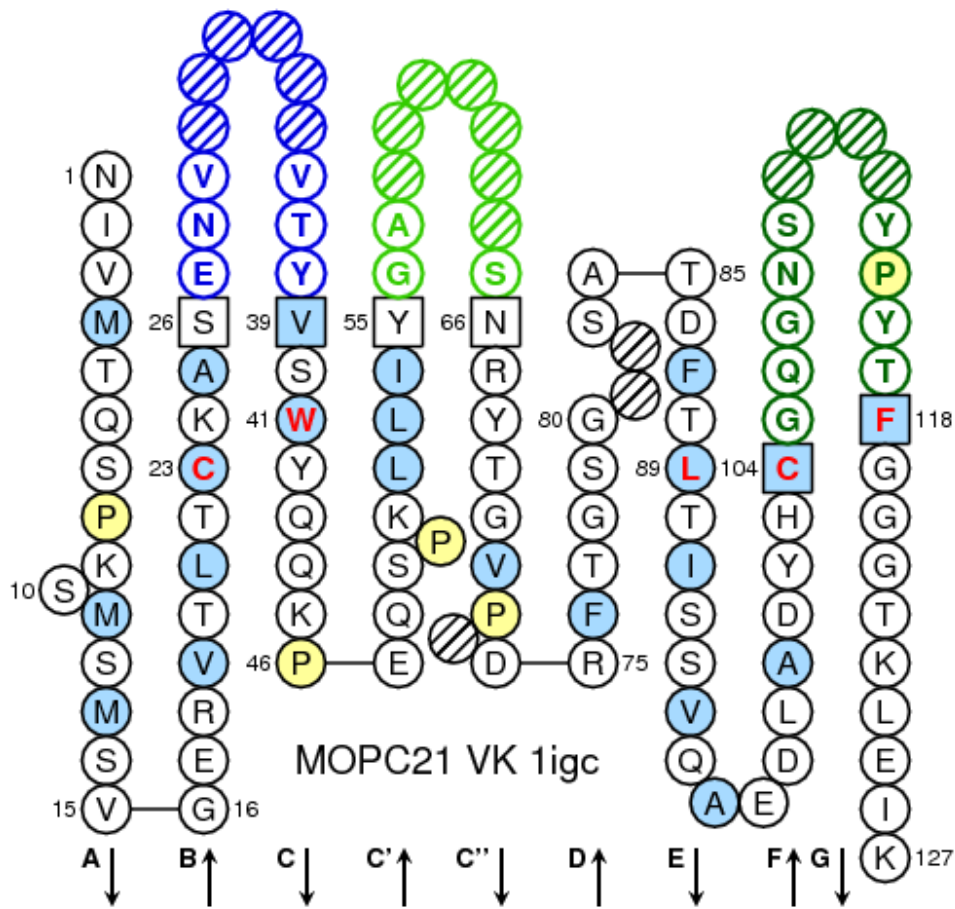
**Kappa light chain sequence**

NIVMTQSPKSMMSVGERVTLTCKASENVVTYVSWYQQKPEQSPKLLIYGASNR  
 YTGVPDRFTGSGSATDFTLTISSVQAEDLADYHCGQGNSYPYTFGGGTKLEIKR  
 ADAAPTVSIFPPSSEQLTSGGASVVCFLNNFYPKDINVKWKIDSERQNGVLNSW  
 TDQDSKDYSTYSMSSTLTLTKDEYERHNSYTCEATHKTSTSPIVKSFNRNEC

**V-KAPPA with gaps according to the IMGT unique numbering**

NIVMTQSPKSM~~S~~SVGERVTLTCKASENV.....VTYVSWYQQKPEQSPKLLI  
 YGA.....SNRYTGVP.DRFTGSG..SATDFTLTISSVQAEDLADYHCGQGN  
 S.....YPYTFGGGTKLEIK

**IMGT Collier de Perles for the MOPC21 V-KAPPA domain**



**IGKC with gaps according to the IMGT unique numbering**

....RADAAPT~~V~~SIFPPSSEQLT...SGGASVVCFLNNFY~~P~~..KDINVKWKID.  
 SERQ~~N~~..GVLNSWTDQDSKD.....STYSMSSTLTLTKDEY..ERHNSYTCEAT  
 HKT..STSPIVKSFNRNEC