

Product Data Sheet

anti-human Pregnancy-specific-protein (PSG) monoclonal antibody

Product information

Catalog Number:	GM-0507
Clone:	BAP3
Description:	purified monoclonal mouse antibody
Specificity:	anti-human PSG (CD 66f); epitope in the B2 domain (present in most PSG)
Isotype:	IgG1
Purification:	Protein G
Storage:	short term: 2°C - 8°C; long term: -20°C (avoid repeated freezing and thawing)
Buffer :	phosphate buffered saline, pH 7.2
Immunogen:	immunisation with extracted protein of human PSG
Selection:	based on recognition of the complete native protein expressed on transfected mammalian cells

Working dilutions

Flow cytometry: 1.2 µg/10⁶ cells
For each application a titration should be performed to determine the optimal concentration.

Specificity testing by flow cytometry

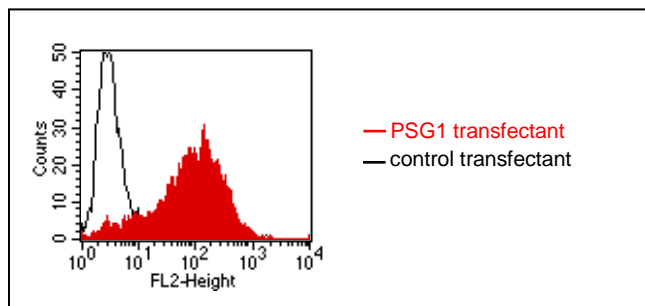


Fig.1: FACS analysis of CHO cells using BAP3 Cat.# GM-0507. CHO cells were transiently transfected with an expression vector encoding a recombinant, transmembrane-anchored form of PSG1 (red curve) or an irrelevant protein (control transfectant: black curve). Binding of BAP3 was detected with a PE-conjugated secondary antibody. A positive signal was obtained only with PSG1 transfected cells.

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Antibody cross-reactivity with members of the CEA family

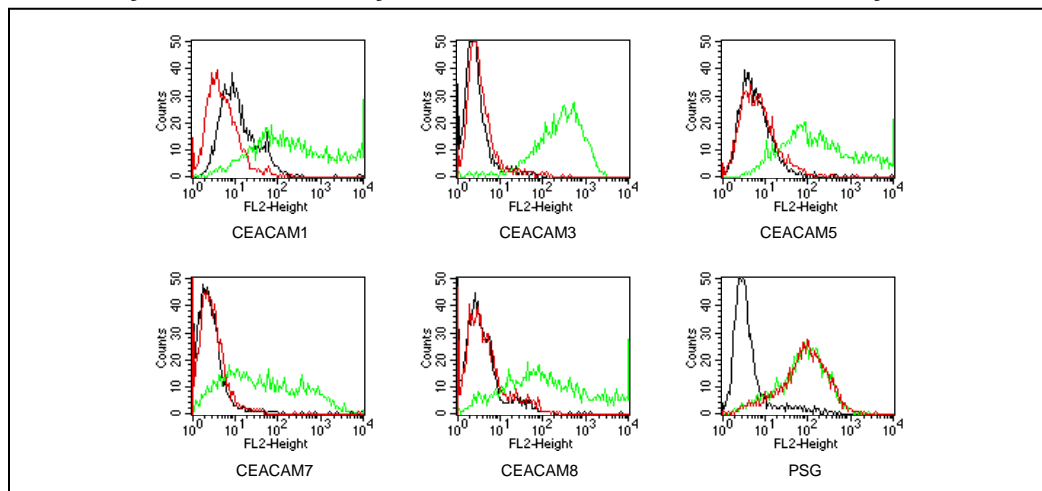


Fig2: Members of the CEA family were expressed on BOSC cells after transient transfection with expression vectors containing either the cDNA of CEACAM1,3,5,7 or 8. Recognition of CEACAM3 and of a recombinant transmembrane-anchored PSG1 fusion protein was tested on stably transfected HeLa cells. Expression of the constructs was confirmed with monoclonal antibodies known to recognise the corresponding proteins (CEACAM1, 3 and 5: D14HD11; CEACAM7: CAC2; CEACAM8: 80H3; PSG: BAP3; green curves). An irrelevant monoclonal antibody served as a negative control (black curves). For specificity testing, protein G purified BAP3 was tested on all CEACAM transfectants. A positive signal was only obtained with PSG expressing cells (red curves).

Background

The human pregnancy-specific glycoprotein family (PSG) is a group of closely related secreted glycoproteins which are highly expressed in placental syncytiotrophoblast cells of fetal origin (1). PSG are commonly expressed in tumors of trophoblast origin (hydatidiform mole, choriocarcinoma). They represent the most abundant fetal protein in the maternal blood at term. Together with the carcinoembryonic antigen (CEA)-related cell adhesion molecule (CEACAM) genes, the human PSG genes form the CEACAM gene family (2). PSG stimulate secretion of T_H2-type cytokines from monocytes. CD9 was shown to represent the monocyte receptor for murine PSG17 (3). PSG are thought to modulate the maternal immune system during pregnancy thus protecting the semiallogenic fetus from rejection (4).

References

1. **Beauchemin N, Draber P, Dveksler G, Gold P, Gray-Owen S, Grunert F, Hammarström S, Holmes KV, Karlsson A, Kuroki M, Lin SH, Lucka L, Najjar SM, Neumaier M, Öbrink B, Shively JE, Skubitz KM, Stanners CP, Thomas P, Thompson JA, Virji M, von Kleist S, Wagener C, Watt S and Zimmermann W (1999).** Redefined nomenclature for members of the carcinoembryonic antigen family. *Exp Cell Res* 252: 243-249.
2. **Hammarström S (1999).** The carcinoembryonic antigen (CEA) family: structures, suggested functions and expression in normal and malignant tissues. *Semin Cancer Biol* 9: 67-81.
3. **Snyder SK, Wessner DH, Wessells JL, Waterhouse RM, Wahl LM, Zimmermann W and Dveksler GS (2001).** Pregnancy-specific glycoproteins function as immunomodulators by inducing secretion of IL-10, IL-6 and TGF-beta1 by human monocytes. *Am J Reprod Immunol* 45: 205-216.
4. **Sokolov AV, Kozliaeva GA, Mesnianskina NV and Tatarinov I (1978).** [Isolation and purification of specific beta1-G-globulin]. *Vopr Med Khim* 24: 240-244.
5. **Zhou GQ, Baranov V, Zimmermann W, Grunert F, Erhard B, Mincheva-Nilsson L, Hammarström S and Thompson J (1997).** Highly specific monoclonal antibody demonstrates that pregnancy-specific glycoprotein (PSG) is limited to syncytiotrophoblast in human early and term placenta. *Placenta* 18: 491-501.

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