



Special Issue on
**The Role of HLA-Class Ib Molecules in
Immune-Related Diseases, Tumors, and Infections
2016**

CALL FOR PAPERS

HLA-class Ib family includes HLA-E, HLA-F, HLA-G, and HLA-H molecules that, in contrast with high polymorphic HLA-class Ia molecules (HLA-A, -B, and -C), display a limited polymorphism, with a small number of alleles encoding limited functional proteins. Similar to HLA-class Ia molecules, HLA-class Ib molecules bind peptides generated from cytosolic antigens and present them to CD8⁺ T lymphocytes, but their main function is the regulation of immune responses, both in physiological and in pathological conditions.

HLA-G is the best characterized HLA-Ib molecule. It is expressed on fetal cytotrophoblast cells during pregnancy and abrogates maternal NK cell cytotoxicity against fetal tissues. However, HLA-G is also expressed (or released as soluble molecule) by different human tumors. HLA-G interacts with specific receptors on T and B lymphocytes, NK cells, and antigen presenting cells, inhibiting their function.

HLA-E is virtually expressed by all nucleated cells and binds peptides derived from HLA-class I molecules leader sequence. In physiological conditions, it interacts with CD94/NKG2A inhibitory receptor on NK cells, inhibiting their cytotoxicity against cells displaying normal HLA-class I molecules expression. When such molecules are downregulated (i.e., transformed or infected cells), HLA-class I-derived peptides are lower, and subsequently HLA-E expression is dampened, allowing NK cells to lyse these cells. However, different transformed cells upregulate HLA-E expression to avoid NK cell-mediated lysis.

Limited information is available regarding HLA-F function. This molecule acts as chaperone for the β 2-microglobulin-free heavy chain of other HLA-class I molecules, and it is expressed on the surface of activated lymphocytes. So far, no functional HLA-H molecules encoded by HLA-H genes have been characterized. We are interested in articles that explore novel aspects of HLA-Ib molecules function.

Potential topics include, but are not limited to:

- ▶ Expression and function of HLA-Ib molecules in pathological conditions that have not yet been investigated, including tumors, infections (virus, bacteria, and other parasites), and autoimmune/inflammatory diseases
- ▶ Interactions between HLA-G, HLA-E, and HLA-F in pathological conditions
- ▶ Novel mechanism of HLA-Ib molecule-mediated immune regulation
- ▶ Possible effects of HLA-Ib molecules on cells that are crucial in pathological settings (i.e., endothelial cells during angiogenesis)
- ▶ Presence of soluble HLA-Ib molecules in biological fluids during disease and their clinical relevance
- ▶ HLA-Ib molecules expression and/or secretion in novel immune-regulatory cell subsets
- ▶ Potential extraimmunological roles of HLA-Ib molecules

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