WAYNE STATE UNIVERSITY

Lipidomics Core Facility

Standard Abbreviations for Fatty Acyl lipids

Fatty acyl lipids of the lipidome consist of saturated and unsaturated fatty acids as well as their derivatives. (see http://www.lipidmaps.org/data/classification/LM_classification_exp.php for a complete classification of the lipidome).
Unfortunately, the names of many of the polyunsaturated fatty acid metabolites can be unwieldy and not easily amenable to communicate, either orally or in print. A set of standard abbreviations were developed several years ago to describe fatty acyl lipids such as prostaglandins, leukotrienes, lipoxins, hydroxy fatty acids, etc., to ease this communication barrier. Rules pertaining to the development of the standard abbreviations were published in several articles [1-6]. Following is a brief summary of the rules to derive and understand the standard abbreviations (for detailed explanations, please refer to the original publications).
Note: This document will be expanded as necessary and at the request of the users. Please feel free to send comments or requests to: lipidomics@wayne.edu

Table 1: Roots for the derived abbreviations of fatty acyl lipids

Abbreviation	Structural feature
D	docosa
DE	dienoic
E	eicosa
Ep	epoxy
H	hydroxy
HE	hexaenoic
Hp	hydroperoxy
LT	leukotriene
Lx	lipoxin
ME	monoenoic
O	octadeca
Oxo	keto
P	protectin
PE	pentaenoic
PG	prostaglandin
Rv	resolvin
TE	tetraenoic
TrE	trienoic
Tx	thromboxane

Procedure: To derive an abbreviation, start with the functional group (e.g. H for hydroxy), add the abbreviation for carbon chain (e.g. E for eicosa), and follow with the number of double bonds (e.g. TE for tetraenoic) to arrive at the abbreviation (e.g. HETE). Use the numerical prefix to indicate the position of the functional group and absolute stereochemistry, if known. (E.g. 12-HETE)

© 2013 Wayne State University

Table 2: A few common abbreviations derived using the roots in Table 1

Standard Abbreviation	Common Name	Other Abbreviations
DiHDoHE	dihydroxydocosahexaenoic acid	
DiHDoPE	dihydroxydocosapentaenoic acid	
DiHETE	dihydroxyeicosatetraenoic acid	
DiHETrE	dihydroxyeicosatrienoic acid	DHET
EpDoPE	epoxydocosapentaenoic acid	
EpDoTE	epoxydocosatetraenoic acid	
EpETE	epoxyeicosatetraenoic acid	
EpETrE	epoxyeicosatrienoic acid	EET
EpODE	epoxyoctadecadienoic acid	
EpOME	epoxyoctadecamonoenoic acid	
HDoHE	hydroxydocosahexaenoic acid	HDHA
HDoPE	hydroxydocosapentaenoic acid	HDPA
HEPE	hydroxyeicosapentaenoic acid	
HETE	hydroxyeicosatetraenoic acid	
HETrE	hydroxyeicosatrienoic acid	
HHTrE	hydroxyheptadecatrienoic acid	HHT
HODE	hydroxyoctadecadienoic acid	
HOME	hydroxyoctadecamonoenoic acid	
HOTrE	hydroxyoctadecatrienoic acid	
HpDoHE	hydroperoxydocosahexaenoic acid	
HpDoPE	hydroperoxydocosapentaenoic acid	
HpEPE	hydroperoxyeicosapentaenoic acid	
HpETE	hydroperoxyeicosatetraenoic acid	
HpODE	hydroperoxyoctadecadienoic acid	
LTC_4	Leukotriene C_4	
LxA_4	Lipoxin A_4	
OxoEPE	oxo-eicosapentaenoic acid	
OxoETE	oxo-eicosatetraenoic acid	KETE
OxoODE	oxo-octadecadienoic acid	KODE
PGE_2	Prostaglandin E_2	
RvD_1	Resolvin D_1	
TriHDoHE	trihydroxydocosahexaenoic acid	
TriHDoPE	trihydroxydocosapentaenoic acid	
TriHEPE	trihydroxyeicosapentaenoic acid	
TriHETE	trihydroxyeicosatetraenoic acid	
TxB_2	Thromboxane B_2	

© 2013 Wayne State University

References Cited

1. Smith, W. L., Borgeat, P., Hamberg, M., Jackson Roberts II, L., Willis, A. L., Yamamoto, S., Ramwell, P. W., Rokach, J., Samuelsson, B., Corey, E. J., and Pace-Asciak, C. R. (1990) Nomenclature, In *Methods Enzymol.* (Robert, C. M., and Frank, A. F., Eds.), pp 1-9, Academic Press.
2. Nelson, N. A. (1974) Prostaglandin nomenclature, *J. Med. Chem. 17*, 911-918.
3. Samuelsson, B., Hamberg, M., Roberts Ii, L. J., Oates, J. A., and Nelson, N. A. (1978) Nomenclature for thromboxanes, *Prostaglandins 16*, 857-860.
4. Samuelsson, B., and Hammarström, S. (1980) Nomenclature for leukotrienes, *Prostaglandins 19*, 645-648.
5. Serhan, C. N., Y.-K. Wong, P., and Samuelsson, B. (1987) Nomenclature of lipoxins and related compounds derived from arachidonic acid and eicosapentaenoic acid, *Prostaglandins 34*, 201-204.
6. Taber, D. F., Morrow, J. D., and Jackson Roberts Ii, L. (1997) A nomenclature system for the isoprostanes, *Prostaglandins 53*, 63-67.

© 2013 Wayne State University