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Dear Editor,

In answer to the questioning of the terminology we used in our manuscript (Chen et al., 2014), ASP is a 76-amino acid (8932 Da) fragment, which is identical to C3adesArg, a cleavage product of complement C3. Cleavage of complement C3 is mediated via the alternate complement pathway by the interaction of C3, factor B and adipsin (Factor D, a serine protease enzyme), which generates C3a. Rapid cleavage of the C terminal arginine of C3a by carboxypeptidase N generates ASP (Hugli, 1990). Activation of this pathway is initiated through the C3b component of C3 (ASP precursor) associated with the plasma membrane. In the presence of Mg²⁺, Factor B binds to the activated C3b to form a C3bB complex. This, in turn, induces a conformational change of Factor B, permitting proteolytic cleavage by adipsin. The action of adipsin on C3b-bound Factor B generates a C3bBb fragment (a C3 convertase),
which in turn cleaves complement C3 into C3b and C3a (Schreiber and Muller-Eberhard, 1978; Lesavre et al., 1979). The C3b component can then be recycled back to start the process anew. The carboxy-terminal arginine of C3a is rapidly cleaved in plasma by carboxypeptidase N to form C3adesArg (ASP) (Campbell et al., 2002).

ASP Generation Genes, as previously published (Cianflone et al., 1989; Sniderman and Cianflone, 1994), are the key genes involved in the conversion of complement C3 to its ASP form (aka C3adesArg); C3, factor B and adipsin are produced by adipocytes. These three genes also correlated closely with other genes and have been called the “ASP triad” (MacLaren et al., 2010).

Based on previous studies, we chose the C3-related SNP to investigate the relationship between this C3-related gene and coronary heart disease. In previous studies, the C3 gene was also described as an ASP-related gene, an ASP generation gene and an ASP gene, while in our paper we used the term ASP gene (MacLaren et al., 2010; Farahbakhsh-Farsi et al., 2014). It may not be an accurate descriptive name, but it is not unreasonable to use such a designation, as there is no unique definition of these genes, which are related to ASP generation.

Nevertheless, we appreciate the careful reading of our manuscript. If there are any other questions or suggestions, with readers are welcome to contact us through the e-mail provided in our published paper.

REFERENCES


