



Molecular characterization and tissue expression profile of porcine *Ephrin-B2*

D. Xu and H.M. Ma

College of Animal Science and Technology of Hunan Agricultural University,
Changsha, Hunan, China

Corresponding author: H.M. Ma
E-mail: mahaiming2000@163.com

Genet. Mol. Res. 15 (1): gmr.15017463
Received August 18, 2015
Accepted November 17, 2015
Published March 11, 2016
DOI <http://dx.doi.org/10.4238/gmr.15017463>

ABSTRACT. Ephrin-B2 (EFNB2) is a signaling molecule that plays an important role in cell adhesion, proliferation, and migration in humans. However, little is known about this molecule in pigs. In order to investigate whether *EFNB2* is associated with the skeletal muscle in pigs, we cloned the full-length cDNA of *EFNB2* (GenBank accession No. KF500033) from the longissimus dorsi muscle of Yorkshire pigs by rapid amplification of cDNA ends. The results indicated that its full-length cDNA comprises 1991 bp, with an open reading frame of 1002 bp, a 5' end of 88 bp, and a 3' end of 901 bp. We analyzed the homology of porcine *EFNB2* with sequences from other species, and the phylogenetic tree showed that pig *EFNB2* was most closely related to that from sheep, followed by domestic cats and wolf, with mackerel being the most distantly related. Porcine EFNB2 is a water-soluble protein with a theoretical molecular weight of 36,928.1 Da, an isoelectric point of 8.98, and a hydrophilic transmembrane-spanning region. It contains 19 glycosylation sites and eight phosphorylation sites. The tertiary structure of the EFNB2 protein showed a forniciform helix structure. The porcine *EFNB2* gene was expressed in ten different tissues from 25-day-old Shaziling and Yorkshire piglets, with the highest expression observed in the longissimus dorsi. These results lay the foundation for further study on the *EFNB2* gene in pigs.

Key words: Pig; *EFNB2*; Cloning; Expression profiles