

with TiNbSn alloy intramedullary nails in mice reported enhanced expression of Runx2, which is understood to be an effect of the low Young's modulus of the TiNbSn alloy equalizing the load sharing between bone and metal [5]. Although Young's modulus of Ti45Nb alloy used in this study is not precisely described, it is predicted to be lower than that of Ti6Al4V alloy, which may also be expected to promote bone formation by dispersing stress between bone and metal. If Nb, as discussed by the authors, has the effect of promoting fracture healing by upward regulation of the PI3K-Akt signaling pathway, we considered the possibility that Nb-containing titanium alloys could be useful as orthopedic implants.

The accelerated fracture healing effect of Ti45Nb alloy shown in this study is expected to be investigated in more detail in future studies with fracture treatment plates to investigate the usefulness of Ti45Nb alloy. As strength and corrosion resistance are also important for orthopedic implants, as well as bone osseointegration effect, it is expected that research on these important factors will be developed.

Conflicts of Interest

The authors declare no conflicts of interest associated with this manuscript.

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