Review of: "Volumetric Tomographic 3D Bioprinting of Heterocellular Bone-like Tissues in Seconds"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

The study of Jenny and colleagues leverages the benefits of volumetric tomographic bioprinting and 3D co-culture, offering a promising platform for scaled biofabrication of 3D bone-like tissues with unprecedented long-term functionality, and, more interestingly, demonstrating that co-culture with HUVECs promotes the differentiated phenotype of hMSCs in 3D situation.

The manuscript is generally well written and structured. Otherwise, some mechanisms underlying the conclusions draw by the authors need further elucidation.

Major concerns:
1-Both secretion- and/or contact-dependent mechanisms can be involved in the interplay between hMSCs and HUVECs incorporated in this 3D co-culture system.

However, it remained unclear what is the key soluble factor that mediate the promoting effect of HUVECs upon differentiated phenotype of hMSCs.

Specifically, I am interested about whether the contact-dependent mechanisms also contribute to the interaction between hMSCs and HUVECs in this model?

2-Regarding to Figure 5C, there was no evidence provided to verify whether the generation of endothelium-lined channel was self-organized.