No.

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Proof of Proposition 35 :

Suppose that $T\bar{v}_i = a_{1i}\bar{v}_1 + a_{2i}\bar{v}_2 + \dots + a_{ni}\bar{v}_n$ (1)

Recall that this is the i^{th} column of the matrix $[T]_B$ for $i = 1, \dots, n$.

Similarly, $U\bar{v}_i = b_{1i}\bar{v}_1 + b_{2i}\bar{v}_2 + \dots + b_{ni}\bar{v}_n$ (2)
is the i^{th} column of the matrix $[U]_B$ for $i = 1, \dots, n$

Hence, substituting from (1), we get :-

$$(UT)\bar{v}_i = U(a_{1i}\bar{v}_1 + a_{2i}\bar{v}_2 + \dots + a_{ni}\bar{v}_n)$$
$$= a_{1i}U\bar{v}_1 + a_{2i}U\bar{v}_2 + \dots + a_{ni}U\bar{v}_n$$
$$= a_{1i}(b_{11}\bar{v}_1 + b_{21}\bar{v}_2 + \dots + b_{n1}\bar{v}_n) + \dots + a_{ni}(b_{1n}\bar{v}_1 + \dots + b_{nn}\bar{v}_n)$$

from (2)

In other words, the i^{th} column of $[UT]_B$ is :-

$$\begin{bmatrix} b_{11}a_{1i} + b_{12}a_{2i} + \dots + b_{1n}a_{ni} \\ \vdots \\ b_{n1}a_{1i} + b_{n2}a_{2i} + \dots + b_{nn}a_{ni} \end{bmatrix}$$

$=$ i^{th} column of $[U]_B\,[T]_B$ since
$[U]_B = [b_{ij}]$ & $[T]_B = [a_{ij}]$

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