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Notarization of Knowledge Retrieval from Biomedical Repositories Using Blockchain Technology

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Title:	**Notarization of Knowledge Retrieval from Biomedical Repositories Using Blockchain Technology**
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Abstract:	Biomedical research and clinical decision depend increasingly on a number of authoritative databases, mostly public and continually enriched via peer scientific contributions. Given the dynamic nature of data and their usage in the sensitive domain of biomedical science, it is important to ensure retrieved data integrity and non-repudiation, that is, ensure that retrieved data cannot be modified after retrieval and that the database cannot validly deny that the particular data has been provided as a result of a specific query. In this paper, we propose the use of blockchain technology in combination with digital signatures to create smart digital contracts to seal the query and the respective results each time a third-party requests evidence from a reference biomedical database. The feasibility of the proposed approach is demonstrated using a real blockchain infrastructure and a publicly available medical risk factor reference repository.