

# B-01 Facts on Bear Bile Use in Coronavirus Disease 2019 (COVID-19)

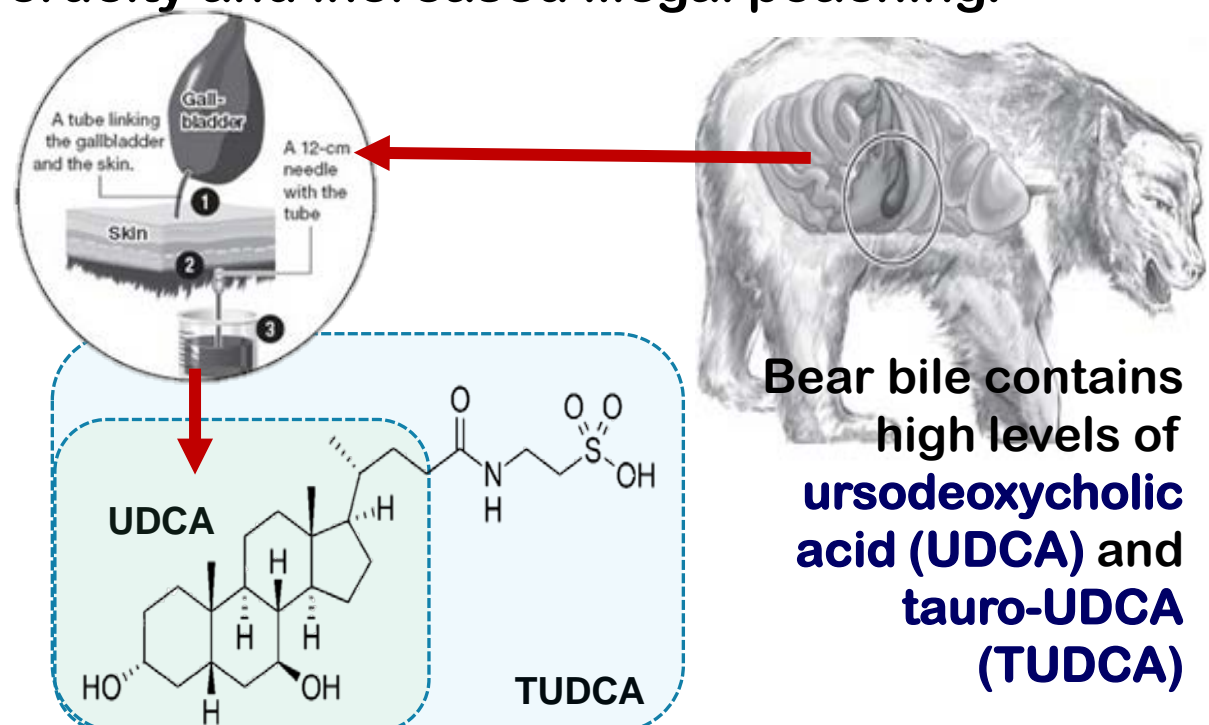
Xin Yi Lim, Norfarahana Japri, Bee Ping Teh, Puspawathy Krishnan, Raja Nazatul Izni Raja Shahrman Shah, Nur Salsabeela Mohd Rahim, Nurmaziah Mohammad Shafie, Terence Yew Chin Tan

Herbal Medicine Research Centre, Institute for Medical Research, National Institutes of Health, 40170 Shah Alam, Selangor Darul Ehsan.

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## INTRODUCTION

In Malaysia, approximately 69% of Traditional Chinese Medicine outlets were reported to be possibly selling bear parts and derivatives in 2018. In 2020, China's National Health Commission issued a guideline outlining the use of an injection named "Tan Re Qing", consisting of bear bile powder and other herbs, to treat critically ill SARS-CoV-2 infected patients, raising concerns on animal cruelty and increased illegal poaching.



## Objective

To conduct a rapid review on the efficacy and safety of bear bile in COVID-19 treatment.

## METHODS

Electronic databases searched for:

Preclinical studies

Clinical studies

bear bile

TUDCA

UDCA

safety

antiviral

mechanism of action

anti-inflammatory

immunomodulatory

Keywords

## RESULTS & DISCUSSION

### 17 included papers

	Antiviral*			Liver Enzyme Improvements			Anti-inflammatory**; Immunomodulatory		
	Bear Bile	UDCA	TUDCA	Bear Bile	UDCA	TUDCA	Bear Bile	UDCA	TUDCA
Clinical (n=8)	0	2NE	0	0	5+	1+	0	0	0
Preclinical (n=9)	2+	1+	0	1+	0	0	2+	3+	0

\*Antiviral: against Hepatitis C Virus

\*\*Anti-inflammatory: reduce TNF- $\alpha$ , IL-1 $\alpha$ , IL-1 $\beta$ , and IL-6

\*\*\*NE= no effect; += positive effect; 0=no paper

Figure 1: Efficacy evidence of included studies (year 1999–2020).

## SAFETY

- **Bear bile:** No clinical studies found; concerns in animal welfare e.g. liver inflammation
- **UDCA:** Safe dose established at 13-15 mg/kg/day, FDA approved for use in humans for primary biliary cirrhosis

## 4 potential alternatives to bear bile:

- Artificial bear bile
- Synthetic UDCA and TUDCA
- Biles from livestock
- Plant-based resources

## CONCLUSION

Although there is insufficient published clinical evidence on bear bile, safety of its main chemical compound UDCA is well established. Further research is required to determine its supportive role in COVID-19 treatment as preclinical evidence shows potential **viral suppression** and **anti-inflammatory** effects.

## ACKNOWLEDGEMENT

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## REFERENCES

- Gomez L. *TRAFFIC*. 2019.
- Wang XJ et al. *Chin J Nat Med*. 2013;11(6):653-665.
- Mazur W et al. *Med Sci Monit*. 2001;7(Suppl 1):157-164.
- Joo SS et al. *Arc Pharm Res*. 2005;28(4):451-457.
- Omata M et al. *Gut*. 2007;56(12):1747-1753.
- Wang et al. *United States Patent*. Patent No: US8753688B2.
- Long LH et al. *Hepatitis monthly*. 2015;15(7):e29052.
- Chen W et al. *Cochrane Database Syst Rev*. 2002:cd003181.
- Galský J et al. *J Clin Gastroenterol*. 1999;28(3):249-253.
- Fabris P et al. *Aliment Pharmacol Ther*. 1999;13:1187-1193.
- Talebian R et al. *J Periodontol*. 2020;JPER:19-0013.
- Tabrizian et al. *Hepat Mon*. 2019;19(7):e86719.
- Ko WK et al. *PLoS One*. 2017;12(6):e0180673.
- Cho EJ et al. *Dig Dis Sci*. 2014;59:1461-1474.
- Yan G et al. *Pharmacology and Clinics of Chinese Materia Medica*. 2011;27(6):53-55.
- Quan MJ et al. *World Chinese Journal of Digestology*. 2005;13(20):2487-2490.