## #140

## LOCAL EXPERIENCE USING THE ULTRASOUND VISUALIZATION SCORE IN HEPATOCELLULAR CARCINOMA SCREENING

Blanca Norero Muñoz[1], Victor Rebolledo Muñoz[2], Claudio Montenegro Navarrete[3], Joel Fuentes Espinoza[3], Andres Yoma Troncoso[3], Rocio Contreras Aravena[3], Viviana Riquelme Sepúlveda[3], Consuelo Rentería Araya[3], Edmundo Martinez Escalona[1], Rodrigo Wolff Rojas[1]

[1] *Departamento de Hepatología. Hospital Sótero del Río, Chile.*
[2] *Facultad de Medicina Interna. Universidad Católica de Chile.*
[3] *Departamento de Radiología. Hospital Sótero del Río, Chile.*

**Introduction and Objectives:** The accuracy of ultrasound screening for hepatocellular carcinoma (HCC) depends on visualization quality. The extent to which clinical and technical variables impact image quality remains unclear. This study aimed to assess our hospital's experience implementing a visualization score in screening ultrasounds.

**Materials and Methods:** Between August 2020 and December 2024, 2,598 screening ultrasounds were performed in 1,256 patients by 6 certified radiologists at Hospital Sótero del Río in Santiago, Chile. Clinical variables, technical artifacts, visualization score, and LIRADS were recorded. Frequencies were calculated, detection rates estimated, and association tests were conducted.

**Results:** The distribution of ultrasounds by year and visualization score is shown in Table and Figure 1. A total of 1,447 (55.7%) examinations were performed in women and 1,151 (44.3%) in men; mean age was 62.7 years. During the study period, 28 HCC were detected (detection rate: 10.8 per 1,000 ultrasounds; 22.3 per 1,000 patients screened; number needed to detect: 45 patients). Visualization score was reported in 1,858 ultrasounds. Score A was most frequent (66.95%), while suboptimal visualization (score B/C) occurred in 33.05%. Male sex (OR 1.46; 95% CI 1.20–1.77; $p < 0.001$) and older age ($p < 0.001$) were associated with score B/C. Technical artifacts such as meteorism, acoustic shadowing, ascites, and bowel interposition were all associated with suboptimal visualization ($p < 0.001$).

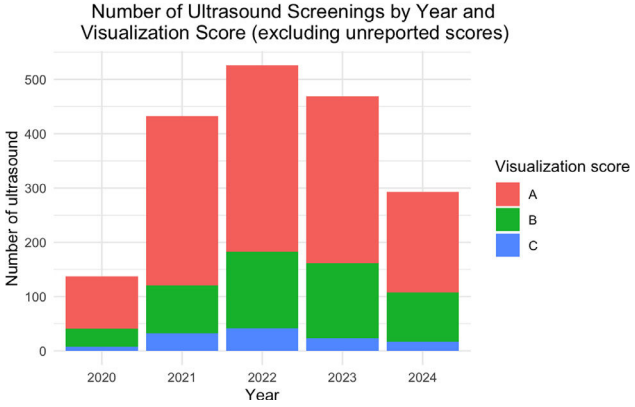
**Conclusions:** The screening program identified one HCC for every 45 patients screened. One-third of ultrasounds showed suboptimal visualization, associated with older age, male sex, and technical artifacts. These findings underscore the importance of optimizing technical conditions during screening.

**Conflict of interest:** None

**Total ultrasounds by year and visualization score (table)**

| | 2020 | 2021 | 2022 | 2023 | 2024 | Total by score |
|---|---|---|---|---|---|---|
| A | 96 | 312 | 343 | 308 | 185 | 1244 |
| B | 33 | 88 | 141 | 138 | 91 | 491 |
| C | 8 | 33 | 42 | 23 | 17 | 123 |
| Score not reported | 20 | 95 | 175 | 184 | 266 | 740 |
| Total by year | 157 | 528 | 701 | 653 | 559 | 2598 |

**Total ultrasounds by year and visualization score (excluding unreported scores)**




https://doi.org/10.1016/j.aohep.2025.102059

## #141

## ENZIMATICALLY MODIFIED QUERCETIN PREVENTS FIBROSIS PROGRESSION IN CHEMICALLY INDUCED LIVER CANCER IN WISTAR RATS

Marina Campos Valdez[1], Karla Verónica Teymennet Ramírez[2], José Alfredo Domínguez Rosales[1], Juliana Marisol Godínez Rubí[3], Erika Martínez López[4], Guillermo Moisés Zúñiga González[5], Iliana del Carmen Barrera Martínez[6], Laura Verónica Sánchez Orozco[1]

[1] *Instituto de Investigación en Enfermedades Crónico Degenerativas. Centro Universitario de Ciencias de la Salud. Universidad de Guadalajara. Guadalajara. México.*
[2] *Unidad de Biotecnología Industrial. Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco. Zapopan. México.*
[3] *Laboratorio de Patología Diagnóstica e Inmunohistoquímica. Departamento de Morfología. Centro Universitario de Ciencias de la Salud. Universidad de Guadalajara. Guadalajara. México.*
[4] *Instituto de Nutrigenética y Nutrigenómica Traslacional. Centro Universitario de Ciencias de la Salud. Guadalajara. México.*
[5] *Laboratorio de Mutagénesis. Centro de Investigación Biomédica de Occidente. Instituto Mexicano del Seguro Social. Guadalajara. México.*
[6] *Departamento de Biotecnología Industrial. SECIHTI-Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco. Zapopan. México.*

**Introduction and Objectives:** The hepatoprotective, antioxidant, and anticancer properties of quercetin cannot easily be used for therapeutic purposes, because of its poor aqueous solubility, rapid

metabolism, low bioavailability, and enzymatic degradation. However, quercetin derivatives may surpass its therapeutic potential. The aim of this study was to evaluate the hepatoprotective effect of enzymatically modified quercetin (dQC-Caf) in an in vivo model of hepatocellular carcinoma (HCC).

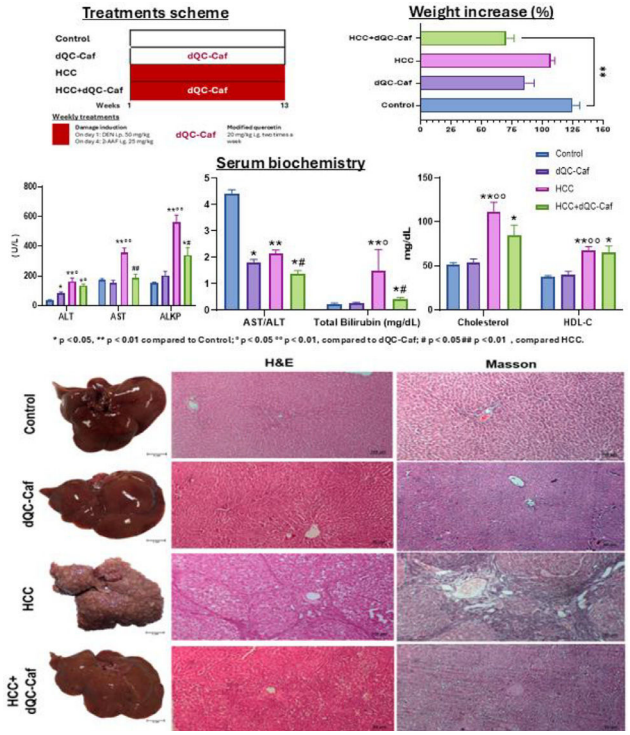
**Materials and Methods:** Male Wistar rats were randomly divided in groups: Control, HCC, dQC-Caf, and HCC+dQC-Caf. HCC was induced for 13 weeks by weekly administration of 50 mg/kg i.p. diethylnitrosamine and 25 mg/kg i.g N-2-fluorenylacetamide. dQC-Caf was administered twice weekly (20 mg/kg i.g.). Tumors development, serum biochemistry, and liver histology were evaluated. Data was analyzed using GraphPad Prism 10 ($p< 0.05$). The protocol was approved by UDG Committees (Code CI-05023). The authors declare no conflicts of interest.

**Results:** Compared to the HCC group, macroscopic tumors were noticeably reduced in the HCC+dQC-Caf group, despite liver inflammation. In this group, ALT, AST/ALT, ALKP, total bilirubin, cholesterol, and HDL-C levels tended to improve compared with the HCC group. AST levels were significantly increased in the latter group, but not in the HCC+dQC-Caf group. Altered hepatocytes were found among both damaged groups; however, severe hepatic fibrosis developed in the HCC group, whereas there was no collagen accumulation in the HCC+dQC-Caf group.

**Conclusions:** Administration of dQC-Caf improved the results of liver function tests and reduced the development of liver fibrosis and macroscopic tumors induced by the damage treatment.

**Conflict of interest:** None

**Modified quercetin effects of chemically induced liver cancer in Wistar rats**




https://doi.org/10.1016/j.aohep.2025.102060

**#142**

## MORINGA OLEIFERA LEAF AQUEOUS EXTRACT IMPROVES SURVIVAL IN A LIVER CANCER MODEL IN WISTAR RATS

Laura Verónica Sánchez Orozco[1], Jaime Sánchez Meza[1], Marina Campos Valdez[2], Amador Campos Valdez[3], José Alfredo Rosales Domínguez[1], Juliana Marisol Godínez Rubí[4], Sarai Citlalic Rodríguez Reyes[5], Erika Martínez López[5], Carmen Magdalena Gurrola Díaz[1], Adriana María Salazar Montes[1], Martha Eloísa Ramos Marquez[1], Guillermo Moisés Zúñiga González[6], Leticia Casas Godoy[3]

[1] *Instituto de Investigación en Enfermedades Crónico Degenerativas. Centro Universitario de Ciencias de la Salud. Universidad de Guadalajara, México.*
[2] *Instituto de Investigación en Enfermedades Crónico Degenerativas. Centro Universitario de Ciencias de la Salud. Universidad de Guadalajara, México.*
[3] *SECIHTI—CIATEJ, México.*
[4] *Laboratorio de Patología Diagnóstica e Inmunohistoquímica. Departamento de Morfología. Centro Universitario de Ciencias de la Salud. Universidad de Guadalajara, México.*
[5] *Instituto de Nutrigenética y Nutrigenómica Traslacional. Centro Universitario de Ciencias de la Salud, México.*
[6] *Laboratorio de Mutagénesis. Centro de Investigación Biomédica de Occidente. Instituto Mexicano del Seguro Social, México.*

**Introduction and Objectives:** Moringa oleifera (moringa) extracts have hepatoprotective, antioxidant, and anticancer effects. This study aimed to determine the effect of moringa extract on an in vivo model of liver cancer.

**Materials and Methods:** Moringa leaves powder was simmered in water at 80°C and its antioxidant capacity was determined using ABTS and DPPH methods. Male Wistar rats were divided in groups: control (Ctl), damage (Dmg), aqueous extract (Leaves-AqE), and 4) damage and Leaves-AqE (Dmg+Leaves-AqE). Leaves-AqE (300mg/kg i.g) was administered daily for two weeks and three times a week during 18 weeks. Since the second week, damage was induced by weekly administration of DEN and 2-AAF for 18 weeks. Serum biochemistry and gene expression were analyzed. Statistical analysis was performed using GraphPad Prism 10 ($p<0.05$). UDG Committees approved the protocol (Code CI-01720). The authors declare no conflicts of interest.

**Results:** Leaves-AqE had an antioxidant capacity slightly more than 70% in vitro. The administration of the extract led to a decrease in liver tumor development and prevented mortality by the damage treatment. Leaves-AqE did not have significant effects on serum hepatic function markers. Interestingly, CAT and SOD were low in the Dmg+Leaves-AqE group. In addition, TGFB1 showed a tendency to decrease in the Dmg+Leaves-AqE group compared to Dmg group.

**Conclusions:** The Leaves-AqE extract has an important antioxidant inhibitory capacity in vitro. This capacity may explain why