

Contents

I. INTRODUCTION

1. Epidemiology, prognosis and metastatic mechanisms of hepatocellular carcinoma (HCC) 1
2. Structure and function of OPN and its role in tumorogenesis and metastasis 2
3. Structure and function of CD44 and its role in tumorogenesis and metastasis 6
4. Evidence of interactions between OPN and CD44 in cancer 10
5. Aim of this work 10

II. MATERIALS AND METHODS

1. Materials 11
2. Methods 11
 - 2.1 Patients 11
 - 2.2 Real-time RT-PCR 12
 - 2.2.1 Frozen liver tissues 13
 - 2.2.2 RNA extraction 13
 - 2.2.3 Instrumentation 13
 - 2.2.4 Protocol of real-time RT-PCR 13
 - 2.2.4.1 Reaction mix of OPN mRNA and beta-actin mRNA 13
 - 2.2.4.2 Thermal cycling parameters 14
 - 2.3 Immunohistochemistry 14
 - 2.4 Follow-up observation 16
 - 2.5 Statistical methods 16

III. RESULTS

1. Overexpression of OPN mRNA in HCC 17
2. Overexpression of OPN in HCC 17
3. Correlation between OPN mRNA and OPN expression in HCC 18
4. Correlation between OPN mRNA and OPN overexpression and

clinicopathological features in HCC	18
5. Correlation between OPN mRNA overexpression and survival in HCC	21
6. Correlation between OPN overexpression and survival in HCC	21
7. Overexpression of CD44s in HCC	21
8. Correlation between CD44s overexpression and clinicopathological features in HCC	22
9. Correlation between CD44s overexpression and survival in HCC	23
10. Correlation between OPN and CD44s in HCC	23
IV. DISCUSSION	32
1. OPN overexpression in HCC	32
2. Relationship between OPN overexpression and clinicopathological features and prognosis in HCC	33
3. Overexpression of CD44s and its relationship with clinicopathological features and prognosis in HCC	35
4. Correlation between OPN and CD44s in HCC and its potential mechanism	37
V. SUMMARY	39
VI. REFERENCES	40
VII. ABBREVIATIONS	52
VIII. ACKNOWLEDGEMENTS	53
IX. CURRICULUM VITAE	54